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Communication and Collaboration: How Relationships Between Local Populations and Environmental Non-Governmental Organizations Could Be Improved

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COMMUNICATION AND COLLABORATION: HOW RELATIONSHIPS BETWEEN LOCAL POPULATIONS AND ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS COULD BE IMPROVED

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ABSTRACT

In a world increasingly beleaguered by deforestation, pollution, global warming and other threats to the environment, we must take every possible step toward the conservation and sustainable management of our planet. Governments, environmental non-governmental organizations, and local communities must all work together in the pursuit of this common goal. Even with such cooperation, however, problems arise during the implementation of projects designed to protect land and resources used by local and indigenous communities. Many of these difficulties are caused by ideological conflicts between conservation organizations and the local communities with which they work, issues that appear repeatedly in the history of such interactions. In this thesis I explore the framework of conservation, including the role of governments, environmental non-governmental organizations (ENGO's), and local populations. This is followed by a history of the relationships between ENGO's and the local and indigenous communities with which they often collaborate. Finally, using a series of three case studies including one that I conducted in Monteverde, Costa Rica in the fall of 2006, I make suggestions as to how these relationships could be improved, ideally creating an interactive framework appropriate to the expansion and change that the field of conservation is experiencing in the 21st century.

INRODUCTION

In an age when income and industry are hallmarks of development, when anthropogenic chemical and gas emissions are altering every biogeochemical process on earth, when clean, fresh water is running out and the other natural resources that sustain us are in peril, it is imperative that we take every step we can toward the conservation and sustainable management of our beleaguered planet (Vitousek et.al. 1997). This undeniable truth has been the driving force behind an ever-expanding environmental movement: the last few decades have witnessed the transformation of environmental protection from a foreign notion into a household issue with concepts like recycling, "wasting water," organic produce, and more (Read 1999, Whole Foods 2003). Countries worldwide have established countless environmental agencies, organizations and foundations whose goal is to safeguard the environment and natural resources. Conservationists, motivated by the need to maintain the biodiversity of the world's diverse habitats, have motivated the creation of hundreds of nature preserves in developed and developing countries (Borgerhoff Mulder and Coppolillo 2005).

With this progress, however, come inevitable glitches in implementation. Two major players in the world of conservation are environmental non-governmental organizations (NGO's or ENGO's) and the local and indigenous communities with which they frequently work. Throughout the past decades of reserve establishment, the hope has been that together these powers can create nature preserves that protect habitat, biodiversity and resources while also sustaining the local population (World Wide Fund for Nature 2006, Dove 2006). Historically, however, ideological differences have contributed to problems in implementation of conservation programs as well as substantial friction between the two groups (Johnston 2006,

Redford and Mansour 1996). This paper is ultimately an examination of that dissent as well as an attempt to discover, through specific case studies, recommendations for its resolution.

In Part I of this thesis, I describe the organizational framework of conservation and the roles of different actors and stakeholders therein, including governments, ENGO's, and local communities. In Part II, I outline the historical ideological differences between conservationist NGO's and the local or indigenous peoples with which they work. Part III consists of a series of three case studies that examine the interactions between ENGO's and groups of local people in different Latin American countries, including one case study based on field work I conducted in Monteverde, Costa Rica in the fall of 2006.. In Part IV, I discuss these case studies and the conclusions that can be drawn from them, highlighting recommendations for the improvement of relationships between ENGO's and local communities involved in the implementation of conservation programs.

PART I: THE FRAMEWORK OF CONSERVATION

Although heralded by noted naturalists since the mid-19th century, the pollution, degradation and destruction of habitats worldwide has only recently become a subject of national and international concern (Salzman and Thompson 2007, Borgerhoff Mulder and Coppolillo 2005). As a result, unprecedented efforts at conservation have taken place. Newly established environmental agencies in various countries have promoted the passing of legislation curbing air pollution, water pollution, release of toxic substances, and other negative environmental externalities of industry. More efficient waste management solutions are continuously being sought, and endangered species are increasingly acquiring legal protection (Salzman and Thompson 2007). Moreover, many countries have responded to environmental threats by establishing nature preserves: areas of land where human activity and economic use have been

limited or banned altogether. In 1978, the International Union for the Conservation of Nature (IUCN) introduced the blanket term "protected area" to describe these preserves. However, not all protected areas are the same. Some operate under the "people-free park" philosophy of conservation, which essentially walls off a protected area from all use but scientific research. In other cases, government policies allow a variety of land use strategies within parks, from recreation to limited hunting and extraction to sustainable logging (Borgerhoff Mulder and Coppolillo 2005). The IUCN addressed these differences by dividing the spectrum of protected areas into six different categories according to the number of restrictions placed on human activities within each class (Table 1.1) (Borgerhoff Mulder and Coppolillo 2005). This system was revised and simplified in 1994, altered mainly to acknowledge that the owners and managers of these areas were no longer solely governmental agencies, but rather included NGO's, corporations, individuals, local communities and indigenous groups (Borgerhoff Mulder and Coppolillo 2005).

Although definitions of conservation differ from person to person and can incorporate pollution control, waste management, toxic substance regulation and a number of other steps toward environmental protection, for the purposes of this paper I define "conservation" as the formation of any of the reserve types described in Table 1.1. I use this definition because, as I will explain later, the idea of "conservation" to a biologist consists largely of the protection of biological diversity. Thus, the formation of reserves as perpetuated by environmental NGO's is generally accomplished with the goal of maintaining biodiversity and the ecosystems that sustain it. Accordingly, "conservation efforts" as evaluated later consist of any political, monetary, lobbyist or other actions taken by any of a variety of actors with the ultimate aim of establishing a reserve. These actors generally fall into one of three categories: governments (local and

national), non-governmental organizations or NGO's (local, national or international), and the local people who live in or around a reserve itself. Each of these groups plays an integral part in the preservation of habitats, biodiversity and natural resources, and before embarking on an examination of relationships central to conservation, it is essential to understand its general framework and the roles of the powers involved.

Governments

Little could happen in the way of reserve establishment without the involvement of local and national governments. These bodies hold the power of legislation, and in the realm of conservation they can employ this power to establish and administer nature reserves as well as to dictate the terms of land use therein (Salzman and Thompson 2007, Shafer 1990, Hunter 2002, Acheson 2006). Environmental NGO's would have trouble implementing projects and creating protected areas without the help of governments; these bodies write the policies that turn a big plot of privately owned land into a protected area with specific land use strategies and management plans (Hill 1996).

Governments are, in addition, generally in charge of ensuring that these terms are being kept by industries and local peoples, an issue which frequently causes conflict when preserves are accused of being "paper parks" whose rules and boundaries are not respected (Alcorn 1993, Acheson 2006). Moreover, the authority of governments puts them in a position to influence the other actors, an ability with a history of both positive and negative consequences. The relationships of conservation organizations to the governments of the countries in which they are based and in which they work often dictate the actions that they are able to take. In addition, local people's regard for their governments and vice versa can influence whether or not their claims and objections are addressed (Chapin 2004, Borgerhoff Mulder and Coppolillo 2005).

Governments also have the power to establish agencies whose role is to protect the environment and regulate its use (Salzman and Thompson 2007). In the US, these agencies include the Environmental Protection Agency and the various organizations overseen by the Department of the Interior (Salzman and Thompson 2007). The US is not the only country to realize the need for governmental control of the environment, though: further afield, the Costa Rican government, for example, administers MINAE, the Ministry of Environment and Energy (Burlingame 2000).

Although the effectiveness of these conservation strategies depends on the strength and ulterior motives of the governments that implement them, political activism is an essential element in reaching conservation goals.

Non-Governmental Organizations

Another important facet of environmental protection is the environmental non-governmental organization (NGO or ENGO). With spheres of influences ranging from the local to the international, NGO's experience a greater freedom of action than governmental organizations, constrained as the latter are by their unilateral source of funding (Hunter 2002).

Environmental NGO's, most often non-profit organizations as well, have similar mission statements despite the varying sizes of their corporations and areas of the globe in which they work. Their goals include preserving the environment, whether for utilitarian, religious, ideological or purely scientific reasons. However, even local ENGO's rarely have a single goal or methodology; most organizations attempt to tackle a variety of problems in a variety of ways. For example, goals can include the preservation of biodiversity, the improvement of living conditions and social systems, or the pursuit of sustainable land management solutions. The

actions taken by these organizations can include fundraising to purchase land, environmental education, lobbying, biological surveys, and development projects.

ENGO's usually function at a local, national, regional, or international level, and the actions taken at these different scales of influence differ subtly. At every level, ENGO's today work with and provide support to other ENGO's and local communities. The higher the level, the more the organization plays a supporting and connecting role, although all types of ENGO's tend to do their own micro-regional field projects. This support can be monetary, technical, informational, leadership- or planning-based, and more.

Local ENGO's are generally established by individuals in a community or municipality. They tend to have the most specific goals, undertaking particular tasks and projects to achieve these goals. An example of a local NGO in my fieldwork was the Monteverde Conservation League in Monteverde, Costa Rica, which was established by local biologists and other community members with the goal of preserving biodiversity in the Monteverde area. Their accomplishments have included environmental education, reforestation projects, and the acquisition of thousands of hectares of pristine rainforest through philanthropic funding and debt-for-nature swaps; more information on this organization will be provided in the Monteverde case study.

National ENGO's are larger organizations with proportionally greater resource bases that attempt to solve environmental problems on a national level. One such organization is CEDA, or the Ecuadorian Center for Environmental Law. Although committed to the overarching goal of environmental preservation that pervades ENGO's, they contribute more legally than scientifically, focusing on promoting national and international environmental legislation as a

means to protect the natural world. Similarly, the projects that they undertake are legally based, aiding local communities and other organizations in need of legal or informational help.

Regional ENGO's are fewer in number and tend to be active over large areas, usually covering several countries. Examples of regions include areas like Europe, Southeast Asia, Latin America, and others; these regional organizations often have satellite agencies in one or more of the countries in which they work. One example is the Environmental Foundation for Africa, a regional ENGO founded by the United Kingdom. Based in Sierra Leone, the EFA works to preserve the natural environment in West Africa. They accomplish this goal through local projects as well as by providing a supporting, linking, and informational sharing role to smaller ENGO's.

The largest ENGO's, those that work on an international scope, are largely scientific research-based, focusing on conservation through the maintenance of biodiversity. Their goals allow them to concentrate regionally, attempting to conserve areas with high biodiversity and important and singular habitat types. Like other, smaller ENGO's, they work on a variety of levels, often with committee-based approaches. Their work with governments includes lobbying for the creation and management of reserves, lobbying for better policies and protection, and furnishing relevant scientific and biological information to facilitate the passing of environmental legislation. With the most diverse resource and financial bases, they are able to provide the most support to smaller ENGO's and communities, and also to implement the greatest number of individual field projects.

The biggest international ENGO's draw their funding from a typically diverse group of governmental agencies, philanthropic foundations, corporations and individuals. These organizations are active in countries worldwide with yearly budgets sometimes reaching

hundreds of millions of dollars. Though often criticized for the power and financial resources that they wield, multifaceted, multinational ENGO's like the World Wide Fund for Nature (WWF), The Nature Conservancy (TNC), and Conservation International (CI) – sometimes known as the "Big Three" of international conservation – are capable of accomplishing proportionally wide-ranging objectives (Chapin 2004). With this power also comes the ability to conceive far-reaching and ambitious goals. Although at their inception and throughout the 1980's and 90's these ENGO's worked largely with governments and local conservation groups, their goals at this stage are becoming much larger in scope and incorporating many more players. Governments, corporations, private institutions, local and community constituents are interwoven into overarching goals of regional environmental conservation, social well-being and sustainable development.

Local Communities

The people who live around and interact with the environments that conservationists are so eager to protect are the final stakeholders in conservation decisions. Much of the dissent involved in conservation implementation exists at this level; as explained in depth in Part II, the goals, philosophies and ideologies of local and indigenous people do not always match those of conservation organizations. At the local level, essentially, people either work on their own initiative or with motivation from ENGO's to preserve the land that they live on and around, a task that they may undertake for a variety of reasons (World Wide Fund for Nature 2006, Alcorn 1993, Dove 2006).

In many instances in developing countries especially, local communities are made up of indigenous or "traditional" people, a label which is inherently difficult to define (Dove 2006). How long must a group of people have lived in an area to be considered "indigenous?" Are they

defined by a shared culture and history, or is a shared lifestyle and subsistence pattern sufficient? Is a concept of indigeneity based on precolonial occupation of a territory too exclusive? Where are traditionally nomadic peoples indigenous to? Should definitions focus more on "nativeness" or historic continuity? These questions are debated by anthropologists and answered differently by dictionaries, organizations, governments and international bodies like the United Nations (Dove 2006).

Despite the many ways this status may be granted, however, many governments sustain indigenous people's claims to the land that they have traditionally occupied, giving them control or private property rights (Redford and Mansour 1996). As administrators of frequently vast and diverse landscapes, indigenous people play a decisive role in the fate of those lands. Indigenous groups are not the only individuals to deeply impact their traditional homelands, however; rural farmers and other long-established demographic groups, such as rubber tappers in the Amazon, have had the same occupations sometimes for hundreds of years (Cahn von Seelen 2004, Brown and Rosendo 2000). In short, the land use practices of local communities, whether indigenous or not, have overwhelming potential to impact biodiversity and habitat maintenance, especially if they are allowed by their governments to exclusively control resource use in the areas that they occupy (Acheson 2006).

In some cases local people are interested in conservation themselves, enlisting the help of ENGO's or their governments to protect their territories from exploitation by industry and other would-be exploiters (World Wide Fund for Nature 2006, Borgerhoff Mulder and Coppolillo 2005). The more common scenario, however, is that of an ENGO approaching a local or indigenous community to attempt to find conservation solutions beneficial to both the local

environment and the people who depend on it (World Wide Fund for Nature 2006, Conservation International 2004, Redford and Mansour 1996).

Although the idea to officially protect the environment in which they live is rarely that of the local people, they are essential to the success of any conservation effort. Government or conservationist action alone is rarely enough to ensure the long-term success of any preservation attempt, as proven by experience and repeatedly stressed in the literature (Jacobsen and McDuff 1998, Fang 2002, Infield 2001, Mulder and Coppolillo 2005). However, the dissent that provides the focus of this paper lies within the historical difficulties in reconciling the needs and desires of local people with conservationist agendas.

PART II: IDEOLOGICAL CONFLICTS

Despite the dire need for environmental NGO's and local communities to work together, discrepancies due to different goals, philosophies, assumptions, and definitions have negatively affected conservation efforts in the past. Although the subtleties of these rocky relationships are numerous, several conflicts have arisen time and again in the history of collaboration between ENGO's and local or indigenous communities. To each of these conflicts there exists a conservationist perspective and a local perspective, both of which are essential to understanding the issue as a whole.

Humans and the Environment: A Sustainable Relationship?

The first of these conflicts involves differences in both philosophies and goals. Despite their initial reluctance to enter into partnerships, since nearly the beginning of the environmental movement that swept the globe conservationists realized both the need and the strategic expediency of collaborating with the local and indigenous people whose practices and decisions affected the landscapes they were working to conserve (Redford and Stearman 1993). Despite

this realization, the fact remains that no matter how much a biologist may see the logic behind an idea like working with native people toward sustainability, this type of humanitarian work is frequently not in their training and also goes against the beliefs inherent in the practice of conservation for scientific, biological reasons (Redford and Stearman 1993, Jacobson and McDuff 1998). This conservation that is practiced by biologists and underlies the goals of many ENGO's is based on the preservation of biological diversity in all its forms (World Wide Fund for Nature 2006, Conservation International 2004, The Nature Conservancy 2006, Redford and Stearman 1993). Conservationists define biodiversity in a variety of ways, but in its most all-encompassing sense it incorporates the diversity of ecosystems on the Earth, the assemblage of biological "communities" within ecosystems, the species and populations that make up those communities, and the genetic variation present in those populations (Noss 1990). An equation involving human activities that still preserves all of these levels of diversity seems impossible. Studies repeatedly show the negative effect of hunting on biological community assemblages: humans tend to deplete populations of prey animals, ultimately impacting populations of large predators like jaguars, which are often keystone species within the ecosystem (Redford and Sanderson 2000, Wilson 1999). Defined by Wilson (1999: 401), a keystone species is "a species, [such as the jaguar], that affects the survival and abundance of many other species in the community in which it lives. Its removal or addition results in a relatively significant shift in the composition of the community and sometimes even in the physical structure of the environment." A source of even more worry is the fact that keystone species are not easily identifiable, and sometimes they cannot be recognized as such before the effects of their depletion are observed (Wilson 1999). Conservationists are dedicated to preventing such drastic decreases in community and species diversity.

Hunting is not the only human activity that negatively impacts natural ecosystems, however. Farmers have been clearing land, frequently by destructive slash-and-burn techniques, and engaging in subsistence and for-profit farming for centuries. The concept of "sustainability" in farming and forestry is hotly debated: in theory, "sustainable" agriculture and extraction should impact their environments as minimally as possible. This includes methods executed in such a way as to prevent ecosystem destruction and to permit the continued use of the land or resource. Some authors attempt to define it, but biologists denounce it as an impossibility because it is impossible to know without long-term data just what an ecosystem can or cannot sustain (Struhsaker 1998, Redford and Stearman 1993). For this reason, although cooperating with local populations to find sustainable, low-impact landscape use solutions may be the only way forward for conservation, it will always be second best for conservationists; environmental preservation without use remains their number one priority (Redford and Sanderson 2000). Because of these beliefs and because conservationists are frequently obligated to work with local populations, these people are often seen as more of an obstacle to be overcome than a possibility for fruitful relationships (Chapin 2004). Local people interpret this mindset as conservationists coming to the community to push their own agendas under the veneer of collaboration (Chapin 2004).

The flip side of this coin is the local and indigenous rejoinder to these misanthropic opinions about the status of the environment and the results of resource use. The bottom line, of course, is that humans are here to stay; and when it comes to the most endangered habitats on Earth, the most common choice is between working toward sustainability and clear-cutting, cattle ranching or other wholly destructive land use practices (Schwartzman et. al. 2000). The other extreme, evicting local or indigenous people from land that they have occupied for

hundreds or even thousands of years is difficult if not impossible to justify with any humanitarian feeling and leads to calamitous social consequences (West et. al. 2006). Local populations and the authors who support their claims also maintain that the effects of their activities on the environment are exaggerated by biologists; hunting and extraction have a much less dire impact than conservationists believe (Schwartzman et.al. 2000). Moreover, local and indigenous populations cite as a main reason for collaboration the reality that destroying the landscape in which they live is rarely in their best interest, not to mention that it would go against the ideologies that for centuries have maintained that landscape for use (Western and Wright 1994). They profess themselves to be much better stewards of nature than governments, who often use land in their best monetary interest, granting industry and development free reign (Schwartzman et.al. 2000, Acheson 2006).

The feather in the cap of anthropologists' arguments in support of local and indigenous land use, however, is the overwhelming evidence that humans have been altering their environments for thousands if not millions of years, and that virtually no landscape on earth is completely free of anthropogenic modification (Redman 1999, Balée 2006). Furthermore, studies have shown evidence that this modification can be not only neutral but in fact beneficial to biodiversity in an area (Mann 2002, Anderson and Posey 1989, Janzen 1998).

despite heated debate over whether or not conservationists and local peoples are actually working toward the same goals, ideologically conservation organizations strive for the protection and management of natural landscapes, preferably in the absence of people. Local groups, on the other hand, are generally working toward the goal of protecting and legalizing land for their own use (Borgerhoff Mulder and Coppolillo 2005). Finding mutually satisfying objectives, therefore, requires compromises on one or both sides: a difficult end to achieve in any relationship.

The Danger of Assumptions

Another causal factor in the unfortunate misunderstandings between ENGO's and local peoples are the assumptions that each makes about the other, especially on the organizational side.

Conservation organizations, especially those with larger spheres of influence, tend to view local communities worldwide as somewhat homogeneous. Arun Agrawal and Clark Gibson (1999: 640) describe this misconception as the " 'mythic community': small, integrated groups using locally evolved norms to manage resources sustainably and equitably." This idea assumes similar community structure, composition, and decision-making processes. It assumes that the interests, political ties, and actors within each community are relatively the same (Agrawal and Gibson 1999). The truth, of course, is that communities are widely diverse across regions and even across nations, and treating them as more or less the same from the outset of a project can only lead to errors in communication and understanding (Agrawal and Gibson 1999).

Other damaging presuppositions historically made by ENGO's include the now-famous myth of the "ecologically noble savage" (Redford 1991), or the assumption that traditional subsistence methods lacking modern technology and uninfluenced by Western thought and practice are inherently symbiotic with the environment. Among others negative outcomes, this assumption led to management plans in which the locals' continued use of a protected area became contingent upon their maintaining a "traditional lifestyle," a condition termed "enforced primitivism" and denounced by anthropologists. Despite the fact that the conservationist community has for the most part recognized this idea as false (Redford 1991, Holt 2005), some organizations still operate under a similar assumption, leading to predictable hitches in project planning and execution (Borgerhoff Mulder and Coppolillo 2005).

Additionally, conservation organizations and local communities alike frequently take for granted that their goals and priorities in implementing a project are the same (Borgerhoff Mulder and Coppolillo 2005). This is a dangerous assumption for either party. On one hand, it can lead to local groups not receiving the benefits that they expected out of a conservation management arrangement (Hill 1996). On the other hand, conservationists dread situations in which a local group gains autonomy or private property rights and proceeds to use their resources in ways unforeseen by the ENGO, such as destructive logging (Terborgh 2000).

Examples like these demonstrate the perils of assuming anything about one's partner in a collaboration situation, but they do not prevent these and similar presumptions from hindering conservation implementation every day.

Defining the Issues

An inherent conflict that ENGO's often fail to realize in their dealings with local and indigenous people is the fact that many of the issues at hand – conservation, sustainability, even forests – are terms defined differently among different groups, and the ideas of those groups often differ significantly from conservationists' own (Struhsaker 1998, Redford and Mansour 1996, Alcorn 1993).

Sustainability, for example, is a concept debated by many and claimed as impossible by most strict biologists because how could we possibly know exactly what the environment can sustain in the long term? Certainly conservationists and local people have different views on the subject. The former define sustainability as methods of farming and harvesting certain goods from a landscape in such a way that maintains biodiversity in the ecosystem, both in the species being harvested and the species that interact with them ecologically (Struhsaker 1998). Local and indigenous groups, however, tend to have a broader sense of the word, taking sustainability

to mean methods of farming and extraction that prevent the destruction of the landscape or the exhaustion of the resource.

In addition, the idea of a forest, though it seems self-explanatory, can be interpreted in different ways. When an ENGO wants to conserve a forest, it wants to preserve biodiversity in all of that ecosystem's components – genetic, species, and community – as well as to preserve all of its attributes structurally, functionally, and compositionally (Redford and Sanderson 2000). When local groups and the anthropologists who work with them talk about forests, on the other hand, they tend to reference them as a group of trees whose function is to provide a home to people and the animals and plants that help to sustain them.

Lastly, conservation itself is a slippery subject. To a biologist, conservation is fundamentally the maintenance of biodiversity and the habitats that sustain it. Conversely, many authors have shown that local and indigenous ideas of conservation differ significantly from the scientific Western view. According to Alcorn, no word for conservation exists in any non-European language, and it is "generally translated as 'respecting Nature,' 'taking care of things,' or 'doing things right'" (1993: 425). Redford's and Stearman's (2000: 253) experience with local and indigenous people lead them to conclude that to these people, "preserving biodiversity means preventing large-scale destruction." In my experience among the local residents of Monteverde, Costa Rica, local definitions of conservation related directly to the individuals' modes of subsistence. Conservation for farmers involved soil and water resources as well as trees to provide windbreaks and maintain watersheds. On the other hand, business owners defined conservation in the vague terms that many of their foreign, ecotouristic customers would define it: all-encompassing, global concepts like "saving the planet" and "maintaining the earth." Redford's (1996) survey at The Nature Conservancy's workshop "Traditional Peoples and

Biodiversity Conservation in Large Tropical Landscapes" determined that one common thread in the definitions of conservation given by the delegates from eight indigenous groups was that of rational use of resources that would maintain them for future generations.

In all of these cases, we see a marked concern in the scientific community for biodiversity and the elements necessary to maintain it. The local and indigenous conceptions of these words, however, tend to be almost unilaterally anthropocentric, defining conservation-related terms with the maintenance and well-being of humans in mind. Even when the two groups attempt to work together for goals they perceive to be common, these disparities in ideology can lead to one or both sides becoming disillusioned with the outcomes.

The Economy of Conservation

The economic side of conservation, although rarely addressed in-depth by anthropologists, is a factor to be ignored at the peril of ENGO's. With wildly different cultures, educations, and socioeconomic backgrounds, conservationists and local and indigenous people often find it difficult to see eye to eye and understand each others' behaviors when [dealing with] these kinds of issues (Borgerhoff Mulder and Coppolillo 2005).

Conservationist ideologies are based in part on economic principles. In the US, suddenly aware of the polluted and overexploited state of our environment, we are doing all we can to inform, tax, bully, coax, and legislate our way out of environmental degradation (Salzman and Thompson 2007). Many of the problems we are experiencing are caused by what Hardin (1968) infamously called the "Tragedy of the Commons," a problematic social phenomenon wherein each individual, acting in his own self interest, exploits a common good to the detriment of all (and in the case of natural resources, the eventual depletion of the resource). The assumption that individuals will act in their own self interest is a building block of Western economic theory, and

it therefore plays a large role in the implementation of conservation practices: essentially, either conservation must somehow be in local people's best interest, or there must be some strong non-economic factors encouraging them to be altruistic (Borgerhoff Mulder and Coppolillo 2005). This is problematic because without taking ecosystem services into account, the economic benefits of conservation, especially with low-impact or no extraction, are neither great nor available in the short-term. The perceived future economic value of a forest, for example, is often less than the owner could gain by simply cutting it all down and selling the timber (Acheson 2006). Moreover, a person's valuation of a good decreases as a function of the amount of time he or she must wait to collect the benefit, a concept referred to as a discount rate (Borgerhoff Mulder and Coppolillo 2005). According to this principle, twenty dollars in your pocket now is worth more to you than the promise of twenty dollars in your pocket a month from now, because anything could happen in the interim: you could die, the price of your good could change, that good could even be destroyed. By the same token, the revenue from clear-cutting a forest today is often worth more to someone than sustainably logging it for twenty years. Depending on age, sex, socioeconomic status and other variables, different people are expected to value future benefits differently, but in most cases individuals are expected to forgo long-term benefits for short-term ones (Borgerhoff Mulder and Coppolillo 2005). These expected economic valuations are not the only factor in decision-making, but they understandably play a large part in how people decide to manage their resources. Given this understanding of individual behavior as determined in part by economic self-interest, it is no wonder that conservationists question whether local and indigenous people will conserve their resources if given control over their disposal (Redford and Sanderson 2000).

Anthropologists counter these economic arguments with the observation that many societies not wholly assimilated into Western thought do not operate under the same principles, and the assumptions that underlie Western economic theory can't be used to predict their behavior (Chapin 2004, Chapeski 1995). In some sense this is true: anthropologists have shown that common-pool resource use and conservation is often maximized in harsh, resource-constrained environments like highly acidic blackwater areas of the northwest Amazon region and dry savannas of central Brazil (Stearman 1994, Borgerhoff Mulder and Coppolillo 2005). In addition, anthropologists and indigenous people alike cite historically successful management of resources on ancient homelands as evidence of the unlikelihood of their overexploiting these resources in the future (Schwartzman et. al. 2000, Redford and Stearman 1993).

However, these rejoinders only apply to a small minority of indigenous groups; they fail to take into account non-indigenous local groups as well as more Westernized indigenous groups. Moreover, exposure to Western societies based on monetary wealth, escalating ties to market economies, and growing populations due to the introduction of better medical techniques are increasing pressure on natural resources and inclination toward overexploitation in even more traditional indigenous societies.

Holt (1999) answers to these inconsistencies in a novel way: she maintains that the views held by conservationists on the type of low-population-density, low-impact traditional indigenous peoples generally held to be "conservation friendly" are actually a Catch-22. Using the same Western ideas of common property theory that underlie conservationist thought and supporting her claims with evidence from the Huaorani of Ecuador, she argues that indigenous groups with limited technology, basic subsistence economies and low population densities are those *least* likely to foster conservationist ideals. Rather, people with improving technologies,

market involvement and greater population density – those commonly held by ENGO's to be inimical to conservation goals – are more apt to realize the need for resource stewardship and promote conservation. Further, she points out the hypocrisy in viewing Western culture as both the problem (causing indigenous peoples to buy guns, drink Coca-Cola and amass monetary wealth) and the solution (being the umbrella of authority under which conservationists assume themselves to be qualified to make decisions about how native people should manage their resources) (Holt 1999).

In the end, conservationists see themselves faced either with the difficult task of putting conservation into an economically beneficial framework for local people, or the equally complex task of appealing to some inherent moral, ethical or religious belief held by local people that would encourage them to conserve their resources. This struggle, exacerbated by the fact that creating economic benefit inevitably involves some level of destructive practices, only serves to worsen the conservationist perception of local people as obstacles to overcome rather than partners and aides. On the flip side, conservationists discourage local and indigenous people from become Westernized, while at the same time ENGO's wield their Western educations and perspectives as tools that grant them the ability to decide the fate of others' resources.

These conflicts and a variety of others arise repeatedly in the implementation of conservation projects; their effects detract from the success of those programs, and the vast majority of environmental NGO's experience years of trial and error before finding one or two conservation projects that succeed (Cahn von Seelen 2004, Redford and Mansour 1996). By analyzing the following case studies of relationships between conservationist organizations and the local communities with which they attempted to collaborate, I will suggest possible strategies to lessen or alleviate the impacts of these debilitating conflicts.

PART III: CASE STUDIES

Three case studies provide examples of both positive and negative relationships between ENGO's and local and indigenous communities. The first is a case study of an indigenous group in Paraguay and a national ENGO. The second case study evaluates the perspectives of conservation policy makers, policy implementers, and the local population obliged to live with policies near a nature preserve in southern Mexico. The third case study, my own, examines the development of conservation by interviewing different groups of local inhabitants in Monteverde, Costa Rica.

CASE STUDY #1: THE ACHÉ OF PARAGUAY

The first case study is based on one of a series of evaluations that were commissioned by The Nature Conservancy as part of a campaign to realize more effective partnerships between the organization and indigenous peoples. These evaluations, written by well-known and respected social scientists in conjunction with indigenous people, culminated with a workshop entitled "Traditional Peoples and Biodiversity Conservation in Large Tropical Landscapes," where the evaluations were presented and discussed. The purpose of this workshop was to examine the relationship between The Nature Conservancy's mission of conservation and the needs and desires of indigenous groups. This workshop was attended by the authors of the case studies, representatives from The Nature Conservancy, and representatives of eight indigenous groups from seven countries in Latin America. The proceedings from this workshop as well as the case studies were published in 1996 (Redford and Mansour 1996).

The evaluation below, written and presented at The Nature Conservancy's workshop by anthropologist Kim Hill (Hill 1996), details the rocky relationship between The Nature Conservancy, its locally active satellite ENGO, and the indigenous Aché people in regard to the

Mbaracayú Nature Reserve in the southeastern part of Paraguay. Hill conducted this study with the help of Tiko Tikuarangi, an Aché who was born in the Reserve and served as the main chief of one of the nearby communities from 1990 to 1995. The case study is based on Hill's experiences while engaged in a research project to measure and monitor edible resource (animal and plant) densities and how human activities impacted those densities within the Reserve. I focus my analysis on Hill's recounting of historical and cultural details about the Aché as well as his observations about the relationship between conservationists and native peoples assimilated during twenty years of research experience with native populations in Paraguay, Peru, and Venezuela.

THE MBARACAYÚ RESERVE

Conservation is of low priority in the Paraguayan government. As in many developing nations, many official policies discourage it in favor of rapid resource exploitation. The law protects only individuals who make "rational use" of their property, which incorporates intensive strategies such as clear-cutting for agricultural use but does not include sustainable use of primary forest. Anyone who keeps their land forested is not considered to be using their landholding rationally, and in reality the only way to prevent expropriation of land in Paraguay is to clear-cut and use it for pastureland or agriculture. A few government agencies are charged with protecting the environment and natural resources, but due to their lack of official support, these agencies are underfunded, understaffed and generally ineffective. Because of this, nationally declared conservation areas are often subject to illegal occupation and immigration as well as hunting and extraction by inhabitants of communities nearby.

Environmental non-governmental organizations, however, tend to enjoy a greater measure of power. Often drawing from the wealthy Paraguayan elite, employees are more

highly educated and better paid than those of governmental groups. Board members and donors are commonly among the most influential people in society, and as a result the ENGO's are much more effective than their governmental counterparts. The high socioeconomic status of many ENGO members, however, has created a history of mistrust and resentment among the peasant and indigenous populations whose destructive land use practices are often the target of conservationist policies and programs.

One ENGO exhibiting these qualities is the Fundación Moisés Bertoni (FMB), a Paraguayan national organization founded in 1988 by former government workers in conjunction with The Nature Conservancy. These individuals, formerly employed by the ineffective government agencies described earlier, wanted to create an organization that carried more weight and enjoyed more success. The ENGO enlisted the help of USAID, which provided initial funding for institutional development, and TNC, who provided funding and organizational training. This association with the respected international ENGO also drew qualified individuals to FMB, leading to increased status and salary among employees and attracting the support and participation of the social and economic elite. Such a status earned the FMB the leverage they needed to carry out their conservationist goals, the first of which materialized in the form of a large land purchase with international funds. They also created a satellite ENGO, the Fundación Mbaracayú, to receive the land title, obtained permission from the government to manage the property, and eventually convinced the Paraguayan government to pass legislation officially protecting the land. Through an agreement between the United Nations, The Nature Conservancy, the FMB, and the Paraguayan government, the Mbaracayú Nature Reserve was created in 1991. Hill does not mention whether the Aché played any part in this process.

The Mbaracayú Nature Reserve ("the Reserve") encompasses 60,000 hectares of forest. Together with the surrounding 250,000 hectares of the upper Jejui watershed, it forms the largest tract of undisturbed tropical forest in eastern Paraguay. The area is characterized by rolling hills covered with evergreen forest and flat valleys dominated by tall broadblade grasses. It includes a variety of ecosystems including forests, rivers, mountains, caves, grasslands, and wetlands, all of which contain important biological communities unique to the area. The region is additionally ecologically important: the Reserve shelters around 90 percent of all of the rare and endangered species in Paraguay and harbors a plethora of plant and animal species found in no other South American park

THE ACHÉ

The Reserve is also home to the indigenous Aché, who according to archaeological research have occupied the region for over 10,000 years. Historical records show that the Aché experienced no peaceful contact with outsiders between the Spanish invasion in the 1500's and the 1970's. The Aché were resettled on mission and government reservations in the 1970's, where they live today. The current Aché population numbers approximately 700 dispersed in five separate settlements, two of which are close to the Reserve and involved in its management. These reservations contain more than just the Aché communities; in addition, each embraces a small portion of forested land to which the community holds legal title.

The Aché traditionally lived in nomadic, independent small bands which had no formal leadership and a membership that fluctuated. War was an important aspect of life: Aché bands were unfriendly to one another, and non-Aché people such as the Guaraní Indians or foreign invaders were killed on sight.

According to Hill, the Aché hold no religious beliefs about the forest or the resources that sustain them. Shamanism, a fundamental aspect of many cultures of indigenous Amazonia, is absent, and medicinal plants are infrequently used. No animals or plants are sacred or taboo, but myths about animal behavior and animal relationships to humans are common. In fact, one enduring aspect of Aché culture is the traditional naming of Aché youth, which demands that a child be named after an important game animal that its mother cooked and consumed during pregnancy. This practice defies the pattern of departure from cultural norms that has resulted in the disappearance of so many other traditions – birth rituals, puberty ceremonies, singing, and traditional hairstyles among others – and it has important implications for conservation. The Aché refuse to name their children after domestic animals, and because all animals found in their area are part of the naming system, they insist upon hunting and consuming all of them at least occasionally, regardless of rare or endangered status. Thus, because of this facet of Aché culture, "replacing" wild game with domesticated animals is not a viable conservation strategy.

The refusal of the Aché to restrict their hunting patterns also alludes to an important aspect of Aché culture: the concept of extinction is entirely outside of their realm of possibility. With their history of nomadism and low population density, until recently their resource depletion has been localized, and their only experience with limitations on hunting has been to take fewer individuals of species that become scarce. In their worldview, a shortage of one animal is temporary, and thus the Aché simply have to wait for more of that species to migrate from another area. As a result, they have exhausted the populations of nearly all game animals in their reservation forest. The idea that a species could potentially be exploited to the point that it no longer exists is not within their worldview.

Another changing aspect of Aché culture with important implications for conservation is their economy and associated resource use patterns. Originally their economy centered on the hunting of game animals, the extraction of wild honey, insect larvae, and palm starch, and the collection of seasonal fruits. The current economy includes these practices as well as swidden or slash-and-burn agriculture and the raising of domestic animals including chickens and pigs, which were introduced in the last 15 years. There is, however, a generational gap in Aché knowledge and economic practices. The individuals who were children at the time of Aché settlement on reservations and now 25 to 35 years in age tended to practice traditional hunting and extraction methods. The younger age group, who were born on the reservation and attended school rather than foraging during their childhood, have many fewer skills than their parents and much less interest in hunting. Men in this age group know less about the habits of animals and the tracking skill necessary to hunt them, and thus make greater use of firearms, dogs, and fishing, as well as taking greater numbers of small birds. The women of this cohort do not know how to fashion the customary women's tools and are ignorant of the extraction of palm fiber, traditionally the main activity of women in the forest. These younger Aché are much more interested than their predecessors in farming, raising domestic animals, and performing wage labor. This generational gap and shift in economic practices has not, however, changed the role of women in the society, who believe that a large and healthy family is the most important goal in a woman's life and are still mainly occupied with intensive child-rearing as a full-time activity.

The economic structure of the community is geared toward communal ownership and individual exploitation of resources. Although resources are community property and as such the leaders of the community in theory have sole rights to their disposal, they are in reality exploited unconditionally by all with no community controls over game taken or fruit harvested. This

economic structure encourages short-term resource exploitation over long-term management: you have to take what you can before your neighbor takes it. Moreover, reservation lands are also hunted and fished by nearby non-native populations, who would exploit anything that the Aché "conserved" if the latter ever chose to do so. Essentially, although long-term conservation of resources would be in the best interests of all Aché, the economic structure in place in their communities does little to encourage conservationist thinking or practices, and it is likely to lead to the Tragedy of the Commons. On the other hand, income is acquired through the sale of handicrafts and wage labor rather than the harvest of forest products for profits.

Chupa Pou and Arroyo Bandera are two communities of Aché located close to the Reserve. The Chupa Pou community, which holds legal title to 2,000 hectares of land, has a political system largely imposed by the Catholic missionaries that live nearby: three elected community chiefs serve five-year terms, representing the Chupa Pou population to outside organizations and making resource use and development decisions in consultation with missionaries. Most community decisions are discussed in large community forums attended by all adults, although discourse is often dominated by those Aché who have spent time among non-native Paraguayans as wage laborers or domestic servants. Men in Chupa Pou rely mostly on guns and dogs for hunting.

The smaller community of Arroyo Bandera, which occupies only 500 hectares, uses more traditional hunting and gathering methods and interacts less with outsiders than the inhabitants of Chupa Pou. Their reservation forest has been less extensively logged, but they hunt as intensively as the residents of Chupa Pou and as a result the area contains little game. Three elected chiefs represent the community to outsiders, but decisions are made communally with relatively equal input from all individuals.

CONSERVATION AND THE ACHÉ

Indigenous peoples and Paraguayan peasants alike have little interest in conservation. The Aché have interacted with only two conservation organizations: TNC and the FMB. Although Hill (1996: 175) generalizes the historic interactions between these groups as positive, he makes this qualification based solely on the fact that both the Aché and conservationists are interested in saving the Paraguayan forest. This assertion is also couched in a number of misunderstandings, conflicts, and failed conservation and development programs. Hill (1996: 175) ascribes such difficulties to "communication problems based on language and culture," and he claims conservationists must take the initiative in resolving these issues.

The main misunderstanding that arose between the Aché and conservation organizations was due to the fact that the latter did not, for whatever reason, explain to their partners in conservation what their goals actually were, and why. As detailed above, the Aché have no concept of extinction, and thus the concept of animal protection makes little sense to them. Neither do they perceive the logic in preserving a resource that you do not intend to use. Exacerbating this inherent lack of conservationist principles in Aché culture, no one attempted to broach with them the subject of biodiversity and ecosystem protection, terms that are completely outside the Aché worldview. In summary, these people were left with absolutely no conception of conservationist goals or their importance; instead they saw only the puzzling actions of conservationists and could simply attempt to deduce, necessarily within the context of their own beliefs and philosophies, what the motivations behind those actions could possibly be. The results, unsurprisingly, were often disastrous.

Another important conflict arose as a result of both poor communication and confusing, illogical actions on the part of the FMB. At the time of the study, the interactions between the

Aché and the ENGO had been limited to debates about restrictions on resource use and the FMB occasionally lending economic assistance to the Aché]. With their limited understanding of conservationist goals, the Aché failed to see the logic underlying these restrictions, the enforcing of which was shifting and desultory in nature. Different guards enforced different regulations, and in fact none of the "rules" they were enforcing were ever explicitly stated to the Aché. In addition, the Aché failed to see why the ENGO would help them with some activities – such as planting trees – and not others – such as planting maize. FMB employees implementing projects had goals, but they did not communicate these to the Aché. Equally destructively they did not seek any opportunity to learn about the Aché, their beliefs, their social and economic patterns, and their extensive knowledge about the forest. A familiarity with these aspects of indigenous culture could have informed them as to which policies and programs would work best with respect to the Aché worldview, saving them many years and many dollars worth of effort.

Hill uses three examples to illustrate indigenous economic decisions and conflicts between ENGO's and the Aché people. The first details the different choices of the Chupa Pou and Arroyo Bandera communities in regards to their timber resources. The second conveys the conflicts that arose between the Aché and the FMB over a project involving the raising of domestic pigs. The last example describes government and ENGO vagueness in writing and explaining restrictions placed on the Aché, as well as the reaction of the latter group to these vagaries.

Chupa Pou, Arroyo Bandera, and the Timber Debacle

The history of the exploitation of timber resources in the communities of Chupa Pou and Arroyo Bandera illuminates several aspects of the Aché economic system, including how the system can change with different leadership and cultural pressures. Both communities operate under the

system of collective ownership of resources described above, but in this case Chupa Pou deviates temporarily from that pattern, as detailed below.

In 1987, slightly more than ten years after the Aché were resettled onto reservations, Chupa Pou, the more Westernized of the two communities, acquired the legal title to 2,000 hectares of adjacent land. Inhabitants immediately began selling off valuable hardwood trees to nearby sawmills, ostensibly without contemplating any future effects of this action. An informal consensus arose within the community such that any individual who claimed a tree became the owner of that tree and was free to dispose of it as he or she pleased. These new "owners" of community property immediately began combing the land for valuable trees and putting claim markers on them. Local timber entrepreneurs approached individuals and bought "their" trees. Proceeds were spent on clothes, gambling, parties, canned foods, radios and other luxury products. By 1988, the community had sold all of its valuable trees and spent the resulting income. All Chupa Pou Aché lived well during this period, but when all of the profits were gone community members had nothing to show for their sudden windfall. None of the money had been invested in the community, nor were long-term improvements made.

In contrast, the Arroyo Bandera community in 1990 also decided that they had legal rights to the trees on their reservation. At a community meeting the group decided to sell some hardwood trees to a local timber concessionaire in exchange for a schoolhouse. This building, a sturdy wood and brick structure with a cement floor and glass windows, was built in short order. The community then put a moratorium on the sale of hardwood trees from their reservation, a ban that still existed at the time of the study. In this way, Arroyo Bandera gained an important community building in addition to preserving much of their timber for possible future use.

In 1993, another 6,000 hectares of land were granted to the Chupa Pou community through the cooperative actions of TNC and FMB. Evidently having learned from their mistakes, the community members treated this acquisition much differently than they had their previous land grant. The community, with advice and support from the local Catholic missionaries, came to a consensus that a small amount of the timber should be sold off and traded for rough planks of wood to be used in housing and community projects. Because all members were in agreement, chiefs ruled that no individual ownership or selling of timber would be allowed.

Hill concludes this fable of overconsumption with the hope that seeing the successful Arroyo Bandera example and the Chupa Pou trial and error, the Aché will realize that community-wide control of resource use leading to long-term conservation is the best strategy. However, Hill couches this hope in the caveat that "until the communities recognize both the problem and the solution, and are willing to cede authority over reservation resources to elected representatives, overharvesting of community resources will continue" (1996: 169).

A Poorly Planned Conservation Strategy

Hill details the strained relationship between Aché communities and the FMB with two examples of conservation projects and legislation gone awry. The first describes a program in which the FMB provided small-scale economic help to the Community of Chupa Pou Aché in 1990 in the hope of gaining goodwill toward future conservation programs while at the same time achieving a conservation goal. This program took the form of a community pigpen: the FMB reasoned that if their supply of domestic meat increased, the Aché would stop hunting so intensively and the pressure on local game populations would be lessened. With this in mind, the FMB proposed to purchase for the community a number of breeder pigs and fencing for them. The Aché were

charged with the building of the fence and the feeding of the animals, which would be a community resource. The Aché agreed, and the plan became a reality.

By 1993, both parties recognized that the project was a complete failure. The community suffered from the classic free-rider problem in economics. Because the pigs were a community resource and everyone could consume them regardless of who contributed food and care, there was no reward for those who went to the extra effort of feeding and caring for them. As a result few took the initiative to care for the pigs, and individuals killed and consumed them at every opportunity. Eventually the pig population dwindled to nothing.

More frustrating to the Aché, however, was the fact that many adult members of the community had predicted the failure of the project even before its implementation, although they did not mention this to the FMB until it had already failed. Similar projects had actually been attempted at least three times between 1977 and 1990, and each scheme had failed because there was no way to reward or compensate the individuals who provided food and labor. Thus, the Aché blamed the FMB for implementing a program doomed to fail, and a community leader denounced the organization at a public meeting. According to Hill, "'the FMB should have known that nobody would feed the pigs and they would all be eaten,' that leader said. 'The FMB deceived us, and they have done nothing to help us'"(1996: 176).

Hill proceeds to point out the errors committed by both sides in this project: the Aché refrained from telling the FMB before implementation why the project was likely to fail, and the FMB neglected to research whether similar projects had been attempted before. He also accuses the FMB of behaving paternalistically and neglecting to discuss the project in-depth with the Aché under the assumption that they would not be able to grasp or propose solutions for

complicated issues like the free-rider problem. The Aché were angry at not being treated like humans, with human capabilities and intelligence, by FMB representatives.

Vague Definitions and a Variety of Enforcements

The second example of conservationist-indigenous relations is the misunderstandings between the FMB and the Aché as to how the latter was permitted to use the reserve. Interestingly, although the FMB began to manage the reserve in 1991 and developed regulations concerning its use by the Aché, neither that organization nor the Paraguayan government created written regulations detailing permitted use for the reserve's indigenous inhabitants. The 1991 Paraguayan law that created the reserve simply stated:

> In recognition of the prior use of the forest by the Aché indigenous community, these groups will be permitted to continue subsistence hunting and gathering in the area of The Nature Reserve, as long as they employ traditional methods, and according to that which is allowed in the administrative plan of the reserve. This use right pertains only to the members of the Aché community and cannot be sold, authorized, or ceded to third parties. The members of the local Aché community will be allowed to harvest species of wild animals and plants that are not threatened or in danger, under the regulations established for the conservation of the nature reserve. This use will be regulated by the Honorary Council and based on technical studies and the management plan of the reserve. The participation of the local Aché community in the protection and administration of the reserve will be encouraged, and they (the Aché) will be offered permanent employment that comes about as a result of the development of scientific studies, recreation, and tourism in the reserve and the protected areas around it (Law 112/91, Article 13) (Hill 1996: 177).

In addition to many vague references to the unspecified "management plan" of the reserve to be developed by the FMB, this law was never translated for or communicated to the Aché, and they remained ignorant of its contents in the fall of 1994. Although indigenous community representatives had been present during the process of passing the law, they were not treated equally. Communicating with them was difficult, and legislators and FMB representatives assumed that they were too "unsophisticated" to have opinions about the wording of the law.

Despite the lack of official regulations regarding Aché use of the Reserve, the FMB began developing and enforcing their own regulations in 1992. Although they assured the Aché that they would be consulted before any regulation became official policy, the FMB did not keep

this promise, and the indigenous community was never consulted before the new regulations became official. In subsequent years FMB employees enforced a variety of prohibitions on indigenous use of the reserve. Although all restrictions had some justification, some were more applicable and important than others. A variety of regulations were enforced inconsistently, and none of them were authorized by any written policy. In addition to these irregularities, a few regulations were clearly formulated without ecological knowledge of the region. Some of the game animals that the Aché were prohibited from hunting were locally abundant, contributing further to the indigenous confusion as to why animals should be protected. As a result,, the Aché could not help but conclude that the FMB regulation of their use of the reserve was largely arbitrary. This unsurprisingly did nothing to stimulate trust or respect among the indigenous community, who worried about the lack of protection of their use rights, the lack of formal rules, the absence of Aché input in regulation decisions, and the unlikelihood of any of these things coming about in the near future.

The Aché approached Hill for clarification of many of these concerns when they realized he was collaborating with the FMB in his projects of monitoring game in the reserve. Their questioning culminated in a meeting between representatives of the five Aché communities and Hill rather than a more appropriate meeting between the Aché and the FMB. The Aché raised worthwhile and perceptive questions including:

- What is the definition of "traditional" hunting and gathering methods? Aché methods of hunting and gathering have changed throughout the 20th century and changed even more rapidly after permanent outside contact. Which of these is "traditional," and who decides that issue?
- Why are only "traditional" methods allowed inside the reserve? Isn't the important issue how many animals the Aché kill, not how they kill them?
- If the only activities allowed are those that meet the approval of the administrative plan of the reserve and the Honorary Council, what guarantee do the Aché have of any use rights? Will Aché use rights change from one year to the next at the whim of the council? What guarantee is there that the grandchildren of the current Aché population will have any use rights in the reserve?
- Who is a member of the "local" Aché community and who decides this? Can Aché visiting from other communities hunt inside the reserve?
- What does it mean to say that an animal species is "threatened" or "in danger," and who decides this?

- What does it mean to "encourage" Aché participation in the administration of the reserve? Will the Aché have formal say in decisions about reserve management?
- How often will the Aché be offered employment? What fraction of the employment that comes up will be offered to the Aché? (from Hill 1996:178)

Although the anthropologist could help the Aché address some of their concerns, most of their questions remained unanswered. Hill does not mention whether the communities ever brought these issues to the attention of the FMB.

Many problems could have been solved with frank discussion between the groups. The FMB, however, had internal problems with communication. The high-level executives who met with the Aché leaders often failed to connect with the local employees who were charged with protecting the reserve, leading to contradictions and broken promises with virtually no one in the organization aware of the big picture. These discrepancies led to distrust in the Aché community, who further distanced themselves from the FMB and complained to other organizations that FMB employees were dishonest.

Aside from these two ill-fated conservation programs, only two projects were implemented in the Chupa Pou and Arroyo Bandera communities. Although several other programs were discussed, they were never implemented. Through some error in communication, the Aché assumed that these projects would definitely be executed, and when the opposite proved to be true their mistrust of the conservation organization deepened. To worsen matters, the FMB never fulfilled the commitments they made in the course of the projects they did implement. Because the FMB suffered from a lack of materials as well as a lack of technical and informational support, and also because the Aché had been jaded by too many previous disappointments, these projects were never fully carried out.

Progress Despite Conflict

Even in the face of such ill-fated programs, the FMB has made some headway in the quest to convince the indigenous Aché that conservation is worthwhile. Although the Aché do not support most hunting restrictions and most individuals have little understanding of the concept of extinction, they have accepted some conservationist dogma into their daily lives. In one instance that Hill witnessed, a chief convinced several members of his community to release endangered bush dogs that they had captured as pets, reminding them that the FMB had asked them not to hunt or kill those animals. In another example, Tiko Tikuarangi, the Aché man with whom Hill collaborated, stated at the TNC conference that although he had once hated jaguars as many of his peers do and would have preferred to exterminate them, he is now willing to let them live in the reserve. These examples suggest that despite the lack of effective communication and understanding between conservationists and the Aché, some agreements have been reached, and it would seem that the Aché are willing to comply with regulations that they perceive to be logical.

Learning from some of its mistakes, the FMB has improved communication within its own organization and employees make certain that no promises are made to the Aché that cannot be kept.

CONCLUSION: SHARING THE INTELLECTUAL WEALTH

Hill concludes with several statements on how conservation organizations and indigenous peoples can learn from one another. On one hand, he asserts, ENGO's could potentially be a helpful resource to indigenous peoples, as long as they are willing to be flexible and occasionally teach important skills unrelated to conservation. He lists a variety of things that in his experience native people desired to learn: "how national and local governments work, how to

lobby for funds and political support, how to take apart a truck transmission, how to clean the heads on a tape recorder, and what is the best way to treat syphilis" (Hill 1996: 183). In addition, ecological and scientific knowledge based on experimental evidence and observation could suggest environmental solutions that indigenous people could not arrive at on their own. Hill cites the interest of the Aché in learning about maximal harvest theory and life history theory, two ecological principles that could possibly help them develop sustainable hunting and harvesting techniques.

On the other hand, the main resource that indigenous people have to offer conservationists is their extensive knowledge of the forest. Their generations-old knowledge of tracking, organism identification, animal behavior, and more exceeds the knowledge of ecologists, who see and study their environment through a different perspective. Conservationists and other scientists who are willing to engage indigenous people as research assistants and consultants will be vastly more informed when it comes to making decisions about resource management.

ANALYSIS

As a result of this case study, Hill suggests the following: (1) improve communication to negotiate and find common goals, (2) share knowledge, and (3) explore the possibilities of central control of community resources. While these are worthwhile goals amply supported by the evidence, his methods are somewhat questionable. Although he describes the interactions between TNC, the FMB and the Aché as "positive," Hill highlights overwhelmingly negative examples of these interactions. When he does mention a few positive outcomes of this relationship, Hill fails to note why the individuals in question opted to comply with regulations. In fact, Hill's study fails to discuss the reasoning behind the events that took place. Why did the

Aché who prevented the hunting of bush dogs decide to comply with the conservationist agenda? Why did the Chupa Pou Aché behave one way with their timber resources, and the Arroyo Bandera Aché entirely another? Why did collective action succeed with selective logging but fail utterly in the pig project? Why did the Aché approach Hill with their discrepancies rather than the FMB? Why will the Aché abandon the majority of their cultural traditions but hold fast to the naming system? These lingering questions draw attention to the fact that Hill's study is less ethnography and more simple observation, which in many cases overlooks the deeper underlying factors influencing indigenous decisions.

For example, one important facet of indigenous life that Hill glossed over is the religious belief system of the community. Although he points out that many aspects of the religious beliefs of ecologically similar cultures are missing among the Aché, Hill does not mention the religion that does exist. The significance of religion to native decisions regarding the environment is suggested by the pig project. The importance of the naming system, probably a remnant of an earlier animistic religion, in conjunction with the importance of family that results in the birth of numerous children, should have indicated to the FMB that decreasing the intensity of hunting is a more complicated issue than simply supplying meat from somewhere else. Although Hill explores the economic reasons for the failure of this project, what role do Aché ideologies and religious beliefs play in their motivation for hunting? This question, like those mentioned above, probably has a large bearing on the environmental decisions that these individuals make, and the subject can only be explored through true ethnographic research among the Aché.

Despite these drawbacks, Hill's study is rich in detail and filled with information about the relationships between ENGO's and indigenous people. We see all of the conflicts discussed

in the second part of this paper: ideological differences, misguided assumptions, and conflict as a result of differing definitions of ideas related to conservation. Nonetheless, this article is unique among those presented here for clearly illustrating the complex nature of the last of the conflicts described in Part II: the economic issues associated with conservation. The economic system of the Aché should, according to Western theory, lead to the Tragedy of the Commons, which in some cases it did. However, although many economists suggest granting private property rights to combat these issues, among the Aché this method only served to worsen matters when it came to the disposal of formerly community-owned timber. As a result of observing this process of trial and error, Hill suggests that collectively owned resources managed by elected representatives are the solution; and yet perhaps a private property approach would have worked better in the pig example. Economic solutions are rarely as simple as substituting one economic strategy for another. In this case a combination of economic approaches would have been best, but it would be folly to assume that this same strategy would work for a different indigenous or local group.

CASE STUDY #2: THE CALAKMUL BIOSPHERE RESERVE, CAMPECHE, MEXCIO

A second example of the relationships between local people and ENGO's comes from the Calakmul Biosphere Reserve, a conservation area established by the United Nations Education, Scientific and Cultural Organization (UNESCO) in the State of Campeche in southern Mexico. In an ethnographic study, Kristin Cahn von Seelen analyzes the discourses of various local and national shareholders in conservation. She hypothesized that when groups of people experience conflict over the use of resources, they disagree about not only material concerns but also metaphorical constructs like worldview and way of life. Cahn von Seelen's methods emphasize "observing what people do…listening to what people say…and considering how people say what

they say" (2004: 14), and her philosophy stems from the observation that conservation cannot be implemented while dismissing the cultural and social history of the local population. Through the analysis of interviews, informal conversations, official speeches, life histories, folktales, and community meetings of local inhabitants, environmental and developmental policymakers, and field-level policy implementers, she makes several conclusions about the relationships between these groups and suggests that her methods provide a new and useful tool for understanding resource-use conflict.

YUCATAN HISTORY AND THE CALAKMUL BIOSPHERE RESERVE

Early visitors described the Yucatan Peninsula in southeastern Mexico as wild, sparsely populated by indigenous peoples, and inhospitable to foreigners until around 1970, when a wave of new national policies encouraged subsistence farming among indigenous communities. These visitors failed to see what archaeology and historical ecology later told us: that area of Central America had once harbored the Mayans, one of the greatest civilizations in history. Moreover, the region was far from "wild" and had in fact been modified by humans for thousands of years. In the centuries since the collapse of the Maya states and later the Spanish conquest, the Maya endured several rounds of forced migration, resulting in an amalgam of ethnic Mayans in southern Mexico speaking different languages and harboring racial prejudices against each other. The complex and brutal history of Mexico as a whole did not exclude this region. In the 19th century, the Yucatec Mayans of the northern peninsula violently reclaimed the eastern and southern parts of the Yucatan, making what is now the State of Quintana Roo hostile territory to non-Mayans and Mayans at peace with the Mexican government until the early 1940's. In that era, the government established the *ejido* system of land tenure, under which lands are communally owned but individually farmed in family plots.

Throughout the latter part of the 19th century and well into World War II, many primarily foreign powers holding *chicle* and lumber concessions provided wage labor opportunities for thousands of peninsula inhabitants, half of whom were employed in the extraction of forest products by 1940. These concessionaries, the jobs they provided, and the tradition of intensive forest exploitation that they established profoundly impacted the social, economic, and environmental conditions in the states of Campeche and Quintana Roo. In areas where human habitation had previously been solely seasonal, the extraction companies found it worthwhile to create permanent settlements for their migrant workers connected by their roads and railroads.

Three decades later in the early 1970's, the Mexican government's pro-settlement legislation instituted land reforms favoring subsistence farming and the ejido system of land tenure, which officially restored territories to peasant and indigenous farmers. These policies, which essentially proffered free land in the Yucatan region, were partly geared toward the settlement of lands in the south of the country, which would help to solidify the border with Guatemala. As a consequence of this political encouragement as well as instability and violence in the nearby State of Chiapas, a steady influx of immigrants began to enter the region starting in the 1970's and continuing through the end of the century. This immigration, primarily from the Chol- and Tzeltal-Maya speaking parts of the State of Chiapas, has resulted in the establishment of approximately 70 villages in and around the Calakmul Biosphere Reserve established in 1993.

More recent international policies that encourage conservation in this region have clashed with earlier policies emphasizing settlement and farming, creating the conflicts that form the basis of this case study. These international efforts receive financial support from a variety of privately funded organizations including the Funds for Natural Protected Areas and the Global Environment Fund as well as Mexican and foreign ENGO's working within its boundaries.

These include the United States-based Conservation International, the Canadian Bosque Modelo, and the Mexican ProNatura, Naturaleza Compartida, and BioCensis A.C. The majority of the funding for the Mexican ENGO's is also foreign, coming from private international foundations and individuals.

Mexico's National Institute of Anthropology and History in 1989 first proposed the Calakmul Biosphere Reserve to protect the many archaeological sites in the area, which was officially designated in 1993. Established under UNESCO's Man and the Biosphere Program, the reserve was one of 356 similar conservation areas whose purpose was to "promote solutions to reconcile the conservation of biodiversity with its sustainable use" (Cahn von Seelen 2004: 9). The reserve is composed of 723,000 hectares, but today only 5% of that is pristine or high tropical forest, with 50% more in secondary growth. These densely forested areas are the core of the reserve that is farthest from the roads; most of the area around these highways has been cleared for agriculture and cattle ranching.

Zoh Laguna, the village with about 1,000 inhabitants in which Cahn von Seelen conducted most of her research, is near the eastern border of the State of Campeche. The population consists mainly of Yucatec and Chol Maya, who mutually dislike one another; the Chol Maya are considered to be "invaders" by the Yucatec Maya despite historic and prehistoric evidence demonstrating their previous occupation of the area and subsequent relocation by the Spanish conquistadors.

CONSERVATION AND THE CALAKMUL REGION

According to Cahn von Seelen, the area of Zoh Laguna "was an ideal place for observing and interpreting the dynamics of a cross-cultural resource-use conflict, because it is the center of a region that has garnered considerable attention from national and international organizations

over the past 20 years" (2004: 10). During this time, the previous immigration-friendly ethic collided with the more recent conservationist ethic supported by both the government and various environmental activist organizations.

Governmental support for conservation in the area comes from two different powers: the Calakmul Biosphere Reserve staff, which educates local people about fire prevention and the environment and regulates activities within the reserve, and the Tourism Secretariat, which has a permanent office in Xpujil, a town 10 km from Zoh Laguna. This group works to promote the production and sale of Mayan handicrafts as well as to establish the beginning of a tourism industry, building tourist destinations and training the locals in the hospitality expected by tourists.

Two main conservation organizations, the Canadian NGO Bosque Modelo and the Mexican ProNatura-Península de Yucatan, A.C, operate in the reserve. Although the approach of conservationists in the beginning tended toward absolute prohibition of forest clearing, the actions of community residents has forced them to adopt a sustainability approach. While on rare occasions inhabitants resorted to violence to achieve this end, their more common rebellions have been acts of civil disobedience. Because of the subsistence economy and isolated geography of the area, environmental resource use policies are difficult to develop and nearly impossible to enforce. Community members come to meetings held by conservationists, nod their heads and feign assent, only to return home and simply continue practicing whatever land use strategies they employed before. This tendency of inhabitants to react against or simply ignore initiatives that do not interest or benefit them has forced conservationists to take local needs and desires into account when developing programs and resource use systems.

In the 1990's Bosque Modelo attempted to support conservation in the area by promoting ecotourism, building a guest house for tourists, an activities center, and a "nature path" complete with ecologically informative signs and two captive jaguars. However, by the time the author arrived in 1998, this program had been largely abandoned and its constructions rarely used and overgrown. Although the NGO planned to revamp this project, its status at the time of the author's experience was illustrative of what has been called the "boom and bust cycle" of both conservation and development programs, which suffer from gradually decreasing funds and problems with financial resource allocation. These rather temporary projects, according to Cahn von Seelen, "might be more aptly dubbed 'initiatives,' for there always seem to be new ones beginning" (2004: 22).

The Mexican ENGO, ProNatura-Peninsula de Yucatan, has implemented a wider array of projects and experienced a greater measure of success. Over the last ten years, this organization's conservation attempts have included medicinal plant workshops, educational radio programs, a program encouraging composting and gardening among community women, and a program establishing local organic apiculture. Cahn von Seelen credits the reasonable success among these programs to the fact that ProNatura learned over time to create and implement projects of direct economic benefit to the community. The organization also directly involves community members, employing them as both paid staff and environmental consultants.

The author attributes the failure of ecotouristism initiatives to the lack of local infrastructure as well as to the fact that the presence of such an infrastructure would make the community inherently a less desirable destination for ecotourists. She also hypothesizes that the local population, mostly subsistence farmers by tradition, are interested more in preserving their traditional way of life than in making money. They have little interest in service sector jobs,

which according to their friends and family pay next to nothing, and they have seen ecotourism programs fail in areas around them.

Cahn von Seelen notes that although conservationists and government officials stress the development of a conservation ethic among local people, such an ethic already exists. She suggests that any recent failure of local inhabitants of the Calakmul region to use their resources conservatively stems from one of two main causes. The first is the presence of strong economic incentives for community members to garner short-term profits from cash crops or unsustainable logging. NGO field representatives especially cite this problem. The second is that local community residents are resisting conservation as an embodiment of further assimilation into Western culture.

THE SHAREHOLDERS

Cahn von Seelen's main goal is to understand "where people are coming from" (2004: 27), historically, culturally, intellectually and ideologically. True to her hypotheses that (1) resource-use conflicts have a metaphorical dimension as well as a material one and (2) analyzing formal and informal discourses on the subject of resource use can provide useful information to policy makers, policy implementers, and local community members, Cahn von Seelen examines the way these shareholders talk about issues related to conservation, starting with the creators of environmental resource use policies.

Policy Makers

While exploring how environmental policy is formulated, Cahn von Seelen examines an interview with the founder of Mexico's ENGO ProNatura-Peninsula de Yucatan A.C., an interview with the Director of the Calakmul Biosphere Reserve, and a speech delivered by the Governor of the State of Campeche. Prominently featured in all accounts is the perspective

gained from flying over the Yucatan area, or seeing satellite pictures. This opportunity allows individuals to see firsthand the amount of deforestation that has been perpetuated, and as Cahn von Seelen notes, this experience usually has a profound impact upon those who are able to have it, informing and strengthening their views about nature. However, this privilege is not available to the whole population; as the anthropologist expresses, "the view from above not only has a powerful effect on those who command it; those who command it are themselves powerful" (Cahn von Seelen 2004: 33). Because such a unique perspective is afforded only to the rich, this group of shareholders has almost exclusive access to it.

The author's interview with ProNatura's biologist founder, for example, features an account of her first trip to the Yucatan in the 1960's and her impression of the forest as she flew over it. By comparing this account to those of author and journalist Graham Greene and cultural anthropologists Xochitl Leyua Solano and Gabriel Ascencio Franco, Cahn von Seelen illuminates the differences between accounts of people primarily concerned with social or cultural issues from those of people chiefly concerned with environmental issues. Through this analysis she comes to the conclusion that "'nature' is what we project onto it, a mirror for our allegiances and our times" (Cahn von Seelen 2004: 85). This observation serves to strengthen the author's opinion that different groups of people have different ideas of nature, and each uses its own view to support and promote its traditional or ideal way of life.

Next the Cahn von Seelen examines a speech given by the Governor of the State of Campeche to the *campesinos* of the Calakmul region at the Town of Zoh Laguna. The speech concerned sustainable development: past successes, future imperatives, issues and concerns. Three themes emerged: "ownership of resources; a tension between citizens as clients of, versus citizens as partners with, the government; and the linking or distancing in space and time of

responsibility, blame, authority, power, benefit, and credit to the government and/or to the citizenry" (Cahn von Seelen 2004: 93). Cahn von Seelen concludes that the speaker walks a fine line rhetorically, and metaphorically he is addressing a way of life different from his own which is ultimately at odds with his. He implies that the subsistence farming way of life is neither ecologically nor economically sustainable. His speech, therefore, is ambivalent: delivered to farmers, it tries to assimilate them into a political agenda that no longer includes their way of life, suggesting that the frontier area that is their home is open to one kind of development but not another. She concludes:

> ...Many paradoxes that arise in his speech – between development and conservation, shared patrimony and restricted access, plenty and scarcity, future and past – reflect an ongoing ambivalence about the region's place in Mexico's social, political, and economic fabric, that is complicated by its designation as a site of global ecological import. [She]...found that what is explicitly a discussion by a representative of a currently dominant culture of problems such as illegal woodcutting contains deeper concerns about the loss not only of trees, but also of that culture's particular way of life (Cahn von Seelen 2004: 106).

Finally Cahn von Seelen discusses an interview with the then-current Director of the Calakmul Biosphere Reserve. The director emphasized both the satellite images of the region he commissioned and the fact that they came from Stanford University, a respected American institution. In this discourse, four different themes emerged: giving credit and blame for resource use and misuse; the local conflict between conservation and development; the concept of adapting to rather than assimilating a conservation ethic; and the emergence of the "Calakmul generation" born in the region to immigrants. The metaphor in this case is the idea of this generation: the director hopes it will be a "greener," more sustainable, more ecologically friendly group of people, a step in a different direction for the inhabitants of the area.

Overall, while those with the most power to affect change within the Reserve and its surrounding community both talk about sustainability, the crux of their message seemed to be

that "the rainforest is imperiled, and that it must be saved from technocrats from outright obliteration by peasants" (Cahn von Seelen 2004: 88).

Field Representatives: Policy Implementers

Next Cahn von Seelen relates the details of the time she spent with field representatives employed by locally active ENGO's, those indomitable individuals in charge of actually implementing projects. She accompanied three representatives of different ENGO's on field visits in the area, each in the course of implementing or following up on conservation-based projects. One additional farm she visited on her own.

During her first foray into conservation fieldwork, Cahn von Seelen accompanies Johan Junge, a German doing summer volunteer work for a Chaipas-based ENGO named Na Bolom. This organization focuses more on humanities and social issues than the environment: they wish to renew pride in ancient traditions among contemporary farmers, hopefully restoring the use of sustainable agricultural practices in the bargain. Junge and Cahn von Seelen visited a "milpa" or farm under the ejido system, where Junge gathered information for a photographic exhibit that his organization was mounting at a local Cultural Center. They walked around the large farm, learning from the farmer about his practices, observing his work, and getting an impression of what his life is like. Cahn von Seelen is careful to note the different restrictions and expectations applied to her because she is a woman: because women never go into farms alone or with a farmer, she must always be accompanied on these visits, usually by NGO fieldworkers, ecologists, biologists, or families going for the day. She dressed conservatively to avoid attention and increase the probability that the subjects of her ethnographic study would take her seriously.

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Cahn von Seelen's next fieldwork experience is in the company of a woman named Delia, a representative from ProNatura-Peninsula de Yucatán working on a gardening project among local women in the community of La Guadalupe, the designer and former coordinator of which was on maternity leave. She joins Delia in helping a local woman plant chiles and cilantro and in conducting an orientation meeting for the front-yard gardening project. Over the course of this day, Cahn von Seelen observes several potential problems in conservation implementation. First, she notes the interesting cultural tendency of Mexican people to avoid confronting or contradicting others, especially visitors to their land. Through several similar experiences, Cahn von Seelen concludes that "what sometimes seemed curious behavior to [her] was borne of a desire to facilitate social interactions and to maintain personal dignity" (2004: 152). As innocuous as this behavior seems, it means people are not forthcoming with what they deem to be unnecessary information, and occasionally they respond to questions with the answers they think the inquirer wants to hear, being, as the author calls them, "examples of hosts wanting to make their guests feel good about being where they are and doing what they are doing" (Cahn von Seelen 2004: 152). These behaviors can be misleading and lead fieldworkers to collect misinformation. In addition, the meeting the author attended was fraught with misunderstanding. First, the timing unknowingly overlapped with another community meeting, a fact of which Delia was not apprised until a few hours before the meeting was scheduled to begin, resulting in the gardening meeting being postponed. Next, the gathering of local women, although perfectly cordial, failed to understand exactly what the project entailed. They were "accustomed to receiving something" (Cahn von Seelen 2004: 160) from "projects" implemented by NGO's, which usually involved a grant of money, or at least supplies for whatever activity the NGO wished the community to undertake. Additionally, in the past women had stated, implicitly and

explicitly, that in general if they did not receive money for doing something the conservationists wanted , they did not comply; and the failure of many projects in the area demonstrates that sometimes even if they were paid, it failed to motivate them for any extended period of time. Also, they were accustomed to such projects receiving enthusiastic outside support in the beginning, only to have that support wane with time. Representatives would simply fail to come back after a while, probably contributing to the community's reluctance to continue with project implementation on its own. Although frank discourse between the community women and Delia resolved the issue of what the women would and would not receive in the course of the project, they clearly harbored mistrust for conservation projects and, as an extension, the individuals in charge of implementing them.

With Dave Green, an American cartographer following up on volunteer work he had done for ProNatura-Península de Yucatán, Cahn von Seelen conducted her last experience in conservation fieldwork. She and Green visited two different ejidos, looking over the apiaries that they had developed to sell the organic honey in such high demand in the United States and Europe, an important and relatively easy addendum to subsistence farming that could help support local families. ProNatura had implemented a project with the goal of showing farmers that they could improve their honey by having increased melliferous tree diversity on their farms, and Green had returned to assess the results of this project. He and Cahn von Seelen discussed with the farmers how the honey is produced, what prices were like, and how they kept it from becoming contaminated with pesticides and other chemicals, which the European market would not tolerate. The farmers' words and actions supported the conclusion that they actually believed the chemicals to degrade the honey – a new ideological development in the community – and that many farmers had ceased fumigating their hives with this in mind.

In all these accounts, Cahn von Seelen stresses just how difficult and time consuming simply getting from place to place can be. Most of the locations fieldworkers visit are difficult to reach. She provides details about washed-out, unpaved dirt roads; cars with little suspension – that is, if there are functioning cars to be used at all; and the vast distances and time commitments involved if one is to visit a substantial portion of a community and observe their agricultural practices. Unlike many evaluators of conservation projects who simply criticize the shortcomings of project implementation, Cahn von Seelen sheds light on the obstacles involved and the reasons why project execution might experience difficulties at the field level.

Local Community Members: Living With Policies

Saving the local perspective until last, Cahn von Seelen uses interviews, informal conversations and personal histories to explore the history of immigration to the area, the implications this has for policy, the social stratification within the community, and local perspectives on conservation and Western thinking.

The history of the Town of Zoh Laguna, as described above, involved a primary influx of settlers to work in the sawmill, and later a continuous trickle of refugee-like immigrants fleeing from environmental, social, and political upheaval in their native state. Because of their traditional familiarity with wage labor, the author notes that the first immigrants to the area are more amenable to the idea of conservation and the ecotourism industry it frequently entails. The later immigrants, subsistence farmers by tradition and philosophy, are more apt to resist conservation and ecotourism as a metaphorical consumption and elimination of their worldview and way of life. Cahn von Seelen expresses her view that the conservationist worldview, and that of the first immigrants and wage laborers, is one in which consumption is not actually decreased, but rather it entails a way of life that incorporates "*displaced* resource consumption,

or consumption of gasoline and electricity whose deleterious effects on the environment are not nearly as apparent as those of deforestation, because the oil refineries and power plants are elsewhere (out of sight and, therefore, out of mind)" (2004: 203).

A social gap exists between the primary and secondary immigrants to the area. The most superficial facet of this gap is racial: the primary immigrants were largely Yucatec Mayans, and they look upon the more recent Chol-, Tzeltal-, and Tzotzil-Mayan immigrants as racially inferior invaders, although this opinion rarely entails anything as radical as violence. The other feature of the social gap is more demographic in nature: the first immigrants to Zoh Laguna came for the booming logging industry, and they remember a time when the community was prosperous, the houses were painted, all the children had proper clothes and shoes. Now they mourn the lack of jobs, struggling to make ends meet and working to allow their children to move to other places with more available employment. On the other hand, the secondary immigrants, the subsistence farmers fleeing from a life in which they had virtually nothing, see the village of Zoh Laguna as it is now as paradise: they have land, they have relative security, they can grow their own food and live as did countless generations before them. Interestingly, the primary immigrants blame the immigrant subsistence farmers, rather than the logging industry, for the current deforestation crisis.

Much of the local population, especially the portion that survives by subsistence farming, strongly resists the efforts of conservationists to curb their use of land. To them, these efforts are hypocritical: the government encouraged them to move to the area, or they arrived there with nothing as refugees. They feed their families; they do not take more than their share. What right, they demand, do foreign conservationists have to come in every once in a while and dictate how permanent residents of the region should use their land? Moreover, why do poor farmers in a

developing nation carry the responsibility for rectifying the global environmental problems that developed countries perpetuate? Why must they sacrifice their quality of life so that industries in the United States and Europe can simply continue to emit carbon? These questions are echoed by similar populations worldwide, and there is no viable answer for them.

To conclude her examination of the local perspective on resource-use issues, Cahn von Seelen analyzes several folktales and one personal history gleaned from the Chol Maya immigrant community. This analysis leads to the conclusion that in every story, the concept of over-consumption is associated with moral deficiency. People who want more than their share of a resource are depicted as being socially destructive. Indeed, within the community the Western conservationists, rather than the farmers or wage laborers, are perceived as wanting more than their fair share, "tak[ing] everything [they] see" to fulfill some vague conservationist agenda; Cahn von Seelen, upon reflection, realizes that "excepting only the poorest of its citizens, the industrialized world appears to those not living in it as one, big orgy of acquisition" (2004: 224). By analyzing the messages about Chol Maya culture contained in the folktales as well as the local metaphorical opinion of Western activists, the author concludes that local community inhabitants have an inherent cultural conservationist ethic based on each person taking his or her fair share. Thus their failure to comply with Western conservationist agendas suggests not a failure to adopt such an ethic but rather a resistance to assimilation into a Western way of life.

CONCLUSIONS

From her fieldwork, Cahn von Seelen draws several relevant conclusions about the relationship between local people, policy implementers, and policy makers with regard to resource use. One main points is the fact that conflicts over resource use are rarely simple questions of surviving and getting enough to eat, but rather a larger metaphorical dimension to these conflicts, with

each side defending an ideology and way of life. She stresses the need for conservationists to explore the possibility that local communities are resisting not conservation itself but rather a Western worldview. In line with this, Cahn von Seelen also suggests that tapping into whatever innate conservation ethic exists among the local population would be more profitable for governmental and non-governmental groups than trying to change community culture and instill such an ethic, possibly incurring the resentment and resistance of the locals.

In regards to conservation implementation, she notes that the main lesson ENGO's have learned is to maintain constant presence in an area, checking on progress and addressing any problems that inhabitants experience. Without this regular support from field representatives, community members are likely to abandon the efforts necessary to make projects successful. Additionally, she observes that the only projects that have been truly successful are those that provide clear, direct economic benefits to the community.

Cahn von Seelen emphasizes that to mediate resource-use conflicts and develop subsequent legislation, policymakers and conservationists need to understand where community inhabitants are coming from both materially and metaphorically. In her view, doing so entails examining all aspects of local perspectives, including history, discourse, and even the largely unexplored realm of folklore.

ANALYSIS

In general, Cahn von Seelen presents a thoughtful, perceptive and original work, rife with useful details and interesting insights. Her perspective, however, is that of an anthropologist, and thus more descriptive than prescriptive, leaving room for a number of conclusions and policy recommendations.

The relationships between ENGO's and the immigrant population are less strained in Zoh Laguna than they are among the Aché, and there is less outright conflict. However, we do see misunderstandings and mistrust in addition to the larger metaphorical conflict involving ways of life. Like the Aché, the population of Zoh Laguna is wary of conservation organizations, their aims, and their "boom and bust" cycles of project-implementation enthusiasm. In another parallel, conservationist goals are rarely stated explicitly to community members, nor is the nature of help offered immediately apparent to them. In this respect many of the common discrepancies discussed in Part II between ENGO's and community members are present, although their occurrence is more subtle and less explicitly stated than the conflicts between the Aché and the FMB.

Despite the fact that ENGO's have experienced some success and that conflicts with the local population are not as dire as they could be, some aspects of the interactions between these groups could nonetheless be improved. The first glaring inefficiency in this relationship is that according to Cahn von Seelen, only one ENGO – ProNatura-Península de Yucatán – enjoyed much success, and this with programs as simple as a front-yard garden project, after ten years of trial and error. Why did it take this organization so much time to determine what would work within the economic and social framework of the community, and why has the knowledge of ProNatura not been shared among all locally active ENGO's?

This extended failure of the majority of organizations to determine what projects would work and how they should be implemented suggests that these ENGO's neglected to properly do their homework. Had any of the field representatives done research similar to Cahn von Seelen's, he or she would have stumbled upon some of the deeper conflicts that she revealed. For example, ENGO members frequently noted problems of overexploitation of forest resources, citing

connections to market economies and incentives for short-term gain as responsible. While this changing aspect of local culture is probably related to the destructive resource management strategies being perpetuated, this single-layered explanation fails to take into account Cahn von Seelen's discoveries: (1) an inherent cultural taboo on overconsumption, (2) a general lack of interest among subsistence farmers in making much money, and (3) the ideological resistance of local people in Zoh Laguna to assimilation by Western thoughts and practices. This discrepancy suggests that ENGO's are not correctly interpreting the ideas and drivers behind local decision-making, an egregious mistake when it comes to the development of policy. If conservationists do not understand why people act as they do, how can they hope to convince them to act otherwise? The knowledge of this incongruity sheds light on the reasons why many projects developed by ENGO's were more or less shots in the dark. The nature of these misunderstandings and their implications for the outcomes of conservation projects link this case study strongly with the previous one: in both cases the failure of ENGO's to perceive the deeper reasoning behind community social structure and decision-making led to frequently debilitating glitches in implementation.

Contrary to the unintentional implications of many similar studies, however, the individuals carrying out conservation programs are not lazy, unintelligent, unperceptive or ineffective. On the contrary, the author's accounts suggest they do the very best they can. Unlike other evaluators of NGO-local relationships, Cahn von Seelen describes both the experiences of the local population and the experiences of field representatives for ENGO's. Through this seldom-seen lens we perceive the effort and obstacles involved in actually implementing policy: as a fieldworker one is hot and tired, going from house to house on foot or by unreliable car on bad roads, talking to people as likely to ignore what you say as to take it to

heart, trying to convince them of something you believe to be beneficial and right while they most often persist in ignoring the ostensibly divine light. Although doing so results in the failure of many conservation projects, it is relatively easy to understand why a field representative might cease visiting a community with previous frequency, particularly if funding runs out and he or she believes the project should be self-sustaining. It is not the fault of the field-level underling that his or her training might not have incorporated ethnography, ecology, or economics. Rather, the fault lies higher in the organization, with project planners who made unilateral assumptions about the resources that would be needed to address such problems.

Finally, Cahn von Seelen experienced discrimination because of her gender. Among the Aché, Hill was accepted, respected, received with equanimity in his requests to accompany hunters, and approached when community members could not interpret the restrictions on their resource use. Cahn von Seelen, on the other hand, was obligated to modify her dress and behavior and to always be chaperoned on her forays onto farmlands. Farmers may not have been as frank or open with her as they would have been with a man, though this is speculation based on the knowledge that in few Latin American societies do men have great respect for women. Regardless, her and Delia's status as women severely restricted the actions that they were able to take and the people they were able to influence within the community. This very status, however, allowed them to do several things well: working with women in the garden, advising them about how to use their house and the surrounding area, and obtaining the depth of folklore and personal histories that Cahn von Seelen acquired would have been either difficult or impossible had the author or the field representative been men. In light of this observation, conservation organizations must think carefully about the type of project they are implementing, and what type – or gender – of person would be best suited to gather information about or execute it.

CASE STUDY #3: MONTEVERDE, COSTA RICA

The last conservation case study is my own conducted in Monteverde, Costa Rica in the fall of 2007 (Figure 1). Having spent a number of months in the area before the study began, I could see that the conservation efforts there had been largely successful, with privately owned reserves, local and national ENGO's, a thriving ecotourism-based economy, biological research, and the lives of local people operating side by side with surprisingly few major problems. I also noticed that the Community of Monteverde was an incredibly eclectic one. This made me wonder how the different groups of people who composed that community had influenced the development of conservation there, and whether they played a part in creating its success. To assess the complex interplay of community elements I carried out a series of interviews with the ultimate goal of determining how local perceptions of conservation had contributed to the relative harmony between conservation efforts and community life. With this information I hoped to determine whether the structure of conservation in Monteverde could either serve as a model or provide recommendations for conservation efforts in other areas.

MONTEVERDE HISTORY

In keeping with national aims set stolidly on development, Costa Rican property law grants private property rights to an individual who clears an area of unclaimed virgin rainforest, creating farmland or making other "improvements" to it. Under this statute, the Monteverde area was colonized by Costa Rican subsistence farmers in 1915, who cleared much of the cloud forest habitat to make their living. They had developed a small community by the time that a group of Quakers from Fairhope, Alabama, arrived in 1951. Allured by Costa Rica's tranquility and lack of army, they bought a large tract of land and divided it into farms, leaving the highest, wettest, steepest part forested as a protection of their watershed. Over this patch of forest they

established an ownership group called Bosqueterno, S.A. (The Eternal Forest). Fulfilling their ultimate goal of becoming dairy farmers, they began the Productores de Monteverde, a dairy plant that still aids the livelihood of small-scale farmers in the area (Figures 2 and 3). Some of the Quakers were already familiar with soil and water conservation practices sponsored by the US government; these and the Quaker values that "encouraged conservation of natural resources" they brought to Costa Rica with them (Burlingame 2000).

Throughout much of its history, Monteverde's remoteness from national and regional government seats gave it a self-sufficient mentality. Because government presence and decision-making were lacking, problems were solved through a series of local organizations and committees founded for that purpose. These organizations solved community issues through consensus. That mentality persists to this day: by 1995, over 40 local problem-solving organizations were present (Burlingame 2000). However, problems in Monteverde still exist. Despite the establishment of a local government in 2002, disputes over the use of local resources, the development of the community, and waste management persist. Unfortunately the local government, like those in many developing countries, is often loath to enforce laws against wealthy, powerful, and well-connected community members.

In 1972, the next big step in local conservation took place when Monteverde's first biological reserve, the Monteverde Cloud Forest Preserve (MCFP), was founded (Figure 4). Its establishment was largely due to the efforts of a biologist named George Powell, whose desire to preserve the disappearing forest in Monteverde led him to recruit the help of the San Jose-based Tropical Science Center (TSC), a national ENGO that is now the Reserve's owner, as well as various international conservation organizations such as the World Wide Fund for Nature. The

Quakers' Bosqueterno was added to the MCFP in 1974, when the Quakers leased it to the Tropical Science Center for protection and administration.

In 1985, the establishment of the Monteverde Conservation League (MCL) by biologists with support from local residents added to the successes of conservation in the area. This group utilized both fundraising and debt-for-nature swaps, arrangements based on developing countries agreeing to protect certain areas in exchange for either a creditor forgiving some of their debt, or an organization buying that foreign debt at a discount. In this way the MCL acquired a section of forest bordering the MCFP, creating the Bosque Eterno de los Niños (the Children's Eternal Rainforest) or BEN, the largest private reserve in Central America. Both the MCL and the MCFP created local environmental education programs, and the MCL also established a windbreak project, which involved both tree nurseries and education of local farmers. In addition to encouraging reforestation and relieving some pressure on adjacent forests, this program increased production on participating farms by increasing pollination, decreasing the harmful effects of wind, and decreasing soil erosion problems (Burlingame 2000) (Figure 5). The farmers, many of whom make their living by growing fruits and vegetables and selling to the local Fair Trade coffee co-op, were grateful for this improvement (Figure 6).

Finally, a section of land bordering BEN was leased to the public Santa Elena High School (SEHS) by the Costa Rican government for a conservation project. In 1992 this land became the Santa Elena Reserve (SER), which is still administered by the high school. Together, these four private reserves today make up the majority of the 29,000 hectare Monteverde Reserve Complex (MRC) (Burlingame 2000) (Figure 7). None of the elements of this complex are extractive reserves. Each has a small portion that has been developed for biological study and ecotourism (paths, visitor centers, and research stations), but the majority of the reserve

complex is inaccessible to the general public and off-limits to hunting, harvesting, and other extractive endeavors. Guards employed by reserve owners (MCL, TSC, and SEHS) are responsible for prohibiting these actions as well as maintaining trail networks.

A history of the Monteverde area would not be complete without a discussion of ecotourism. Through a series of scientific papers, books, and documentaries praising the area and its flora and fauna in the 1980's, worldwide interest was generated and tourists began trickling in. By the 1990's this trickle had become a flood of 50,000 tourists per year, and today this number exceeds 200,000 (Nadkarni and Wheelwright 2000). Monteverde's environmental richness and established reserves, coupled with Costa Rica's accessibility and ease of travel, contributed to the development of the tourist industry that now forms the economic foundation of the community and the country. This influx of tourists resulted in a boom of local development, turning the one four-roomed pension of the 1970's into the vast array of hotels, restaurants, stores, internet cafés, and tourist destinations that exists today (Grosby 2000). Many of the owners of these businesses have come from other countries to take advantage of the economic opportunities in Monteverde.

In short, Monteverde is today an interesting amalgam of Quaker dairy farmers, foreign and Costa Rican business owners (Figure 8), subsistence farmers (Figure 9), wage workers employed by the tourism industry, and a community of biologists drawn to the rich ecology of the region, many of whom have inhabited the area for decades (Figure 10)).

METHODS

I set out to discover what community members thought of conservation, what it meant to them and how it intersected their lives. I hoped that this information would shed light on how the

opinions of these local shareholders might have contributed to, or perhaps inhibited, the formation of the vast reserve complex that now characterizes the area.

To explore these local views and ideas about conservation, I decided to conduct interviews with local people. I assumed that opinions would differ between the different groups of shareholders; thus, a simple random sample of community members would not reflect the variety of personal histories and motivations that have contributed to the development of conservation in the area. Rather, in such a situation each group needs to be evaluated independently to create an accurate reflection of community sentiments (Jacobson and McDuff 1998).

With this in mind, I interviewed local shareholders in four of the five aforementioned groups: five Quakers, ten farmers, ten business owners, and ten biologists. Although the portion of the population that works in the ecotourism industry also plays a role in conservation, these four groups are the most likely to make decisions that affect change within the community. This data collection took place over the space of a month during October and November of 2007. The Quakers' sample was restricted to the five original settlers who were still Monteverde residents at the time of sampling. Farmers were local landowners who had lived in the area throughout Monteverde's developmental stage, the decades during which the first reserves were established. Business owners were owners of local businesses that benefited in some way from the tourism industry. Biologists interviewed had lived or worked in Monteverde for an extended period of time and were present through the development of the community and the associated MRC.

I contacted biologists and Quakers with recommendations and contact information from Alan Masters, a local biologist. Business owners were contacted with information from Alan Masters, with help and recommendations from Alexandra Rodriguez, a local resident and

Spanish teacher to foreign visitors, and by convenience sampling. Noé Vargas, a farmer and administrative worker for the local coffee co-op, recommended farmers to interview, and Geovanny and Cristina Leitón, local farmers, provided their contact information. No one declined to be interviewed, but despite the assurances of various community members that owners of certain businesses were "always there," these owners repeatedly, on a variety of different days at different times, "couldn't be found," had "just left," or made an appointment and then simply failed to show up. I did not succeed in interviewing any such evasive owners.

Interviews began with the acquisition of demographic information including name, age, profession, spouse's profession, education, and number of children. Questions were developed based on study goals, focusing on the individual's definition of conservation, the place of conservation in his or her life, opinions on the protection of additional land in the area, and perceived local problems relating to conservation or the environment (Appendix I). Each person was given the same core group of questions, regardless of position in the community; questions were primarily open-ended, and respondents were frequently encouraged to elaborate on their responses. Interviews were conducted in English or Spanish, depending on the respondent's preference, and most were recorded on a small tape recorder for future reference. Interviews took place in the respondent's home or place of business, and seven of the ten biologists completed the interview in survey form over email.

RESULTS

Because the responses to some questions were combined by respondents, only three categories of data emerged from the interviews: definitions of conservation, views regarding the protection of additional land in the Monteverde area, and perceived community problems relating to conservation and the environment.

Demographic Information on Shareholders

The five Quakers had an average age of 77, with a spread from 74 to 83; all of them completed high school, and one completed one year of college. Four spent the majority of their lives being farmers and stay-at-home wives and mothers; one man had had a variety of jobs, from farmer to clerk and distributor for the Cheese Factory. All were born in the United States.

The ten farmers had an average age of 53, with a spread from 37 to 73. Education ranged from none to the completion of high school, and the majority completed primary school or high school. Farming was the main occupation for all but one, who also worked at the Cloud Forest School, a local environmental-education based K-12. The majority had wives who did not do wage labor but were instead occupied with domestic tasks. All were born in Costa Rica, many of them in San Luis, a largely agricultural community near Monteverde where they still live.

Business owners were 43 years old, on average; these ages ranged from 28 to 70, with the majority (n=8) in their 30's and 40's. Four completed college, five others completed high school, and the man with the least education completed three years of high school. Interestingly, six of the owners interviewed were not born in Costa Rica; their countries of origin included the US, Israel, Colombia, Germany, and Algeria. Five of the businesses whose owners consented to be interviewed were hotels; three owned restaurant/bars and two owned stores. Unfortunately, of the large, expensive hotels in the Monteverde area, only one owner consented to be interviewed (Hotel Montaña, Appendix II).

Biologists had an average age of 52, with a spread from 45 to 67. Eight of ten were born in the United States and eight completed at least their PhD; one completed a B.A. and the last completed a Masters in biology. Two were born in Costa Rica. Although only five of these

individuals make their homes in Monteverde, four of the remaining five are landowners who spend part of their time there, and the remaining one lives in the city of San Jose.

Definitions of Conservation

In all cases, a definition was more than just the simple explanation of a word. Most people "defined" conservation by enumerating environmental elements that should be protected, and many included what they did personally to conserve, even before explicitly asked. Across all groups, definitions of conservation were largely utilitarian, with each individual emphasizing the elements that pertained most to their job or subsistence method. Definitions within groups were largely similar, while the dominant definition in any one group was, overtly or subtly, different from those of the other groups (Table 3.1).

In their personal definitions of conservation, four of the Quakers discussed the protection of water sources or natural resources (Table 3.1). During further discussion on the subject they made clear that this sentiment was related to farming; all talked about conservation in terms of conserving nature to sustain people in the future, explicitly or implicitly by making farming possible for future generations. Three perceived tourism as beneficial for the forest, and one perceived tourism as negatively impacting the environment. One reiterated the sentiments expressed in Burlingame (2000) that Quaker religious values advocate the protection of nature.

Although their definitions of conservation were also related to farming, local farmers talked more in terms of trees than water (Table 1). All farmers talked about forests in their definition of conservation, and nine mentioned reforestation and planting trees as something they do individually to conserve. Additionally, farmers generally included other factors important to farming, such as clean water, good soil, and clean air. Seven also brought up animals and/or birds in their definitions of conservation. All farmers discussed how much of the area used to be

deforested, contrasting it to the amount of forest cover now. Several noted that their fathers and grandfathers did this because they did not know any better. Although only three farmers mentioned the Monteverde Conservation League's efforts to educate farmers about animals, plants, and planting native trees for windbreaks, most spoke proudly about their windbreaks as a contribution to conservation.

Business owners had a markedly different perspective on conservation. All spoke about conservation and the environment in all-encompassing, global terms. Although many included references to elements like clean air, clean water, and forests, they did not talk about them as though these things immediately impacted their livelihood; rather, they mentioned them in the context of vague, less specific and large-scale necessities such as "maintaining earth," "saving all parts of the planet," and "lengthen[ing] the life of the earth" (Table 3.1). Their contributions to conservation for the most part consisted of individual, everyday actions applied in their households and businesses, including recycling, creating as little waste as possible, and separating trash. Five respondents spoke of tourism in their definitions, and two discussed conservation as something that needed to be balanced with business and making money. Incidentally, these two were both hotel owners, one of which being the largest and most expensive hotel I was able to interview. This man, in addition, was the only one of 35 respondents to say that conservation was not a part of his life, saying there was nothing that he could do. This singular case, as well as the evasiveness of the owners of additional expensive hotels when solicited for interviews, could suggest that the owners of large, extremely profitable enterprises that take advantage of ecotourism might have different ideas and perspectives than small business owners.

Biologists, unsurprisingly, generally contributed much longer, more involved answers to questions of defining and contributing to conservation. Their definitions were remarkably systematic: seven mentioned the protection of biodiversity in their definitions, and nine mentioned the protection of natural resources or ecosystem functioning (Table 3.1). Eight talked about teaching, researching or writing papers in their contributions to conservation; all expressed conservation as a part of their daily lives. Actions like recycling, trying not to overconsume, and carpooling were repeatedly noted; as one biologist said, "I keep my footprint fairly small" (B. Haber). Additionally, three have limited their family sizes in part to avoid contributing to overpopulation.

One sporadically expressed aspect of the need for conservation was the non-utilitarian idea that nature should be conserved because it is beautiful, because it has a right to be there, or because it has an inherent value. This idea was expressed by two Quakers, five farmers, two business owners, and five biologists.

Occasionally expressed in the discussion of conservation was the idea that without the biologists or Quakers, conservation might not have taken such a hold in Monteverde. Three of the Quakers expressed the idea that biologists started conservation in the area; one even recounted his initial feeling that a reserve would not work and that the biologists were wasting their time. One hotel owner expressed her opinion that the Quakers began the conservationist feeling in the area, and one farmer felt strongly that without the presence of the Quakers and the biologists, deforestation for local farming would have continued at its former devastating rate. In his words, "if it weren't for conservation, if visionary people hadn't existed who started to work very hard with people, I don't know what would have happened to Costa Rica. At one time it was in first place among Central American countries for deforestation" (G. Lobo).

Additional Protection

All Quakers, four business owners, and seven farmers thought that enough land in the Monteverde area was already protected, although one Quaker and one business owner who said yes mentioned the need for corridors to link the Monteverde reserves to other areas. Although they thought that enough land had been conserved, many of them expressed pride in the fact that so much land in the area was protected, talking about how much more land in Monteverde is protected than in other areas, as well as how much more land is forested and conserved now than it was in past generations. Of the nine people in these three groups who thought that more land in Monteverde should be protected, four business owners and one farmer thought that the government should take responsibility for protecting it, and two farmers and two business owners thought it should be "everyone's responsibility," although they could not clarify what they meant (Table 3.2). Although all of the reserved land in Monteverde is privately owned, no one in these groups mentioned that conservation organizations should take responsibility for conserving more land.

Biologists were a different story. None thought that enough land in Monteverde was protected, and instead of answering vaguely that "more" should be conserved, each had definite ideas about what should be protected. The Pacific slope and wildlife corridors were mentioned more than once; elevational gradients and specific forest types were cited as well. In addition, seven expressed additional conservation as a necessity rather than something that simply should be done. Four thought that this expansion of protected area should be the responsibility of the local or national government, while the other six thought that individuals or conservation organizations should shoulder the load (Table 3.2). One pointed out that although in the past conservation has been the work of biologists and conservation organizations, now the local

government should have the responsibility to fulfill conservation goals after biologists point out the need.

Perceived Problems

The environmental problems perceived to be most immediately important in Monteverde varied little between groups. The most commonly cited problems included, in order of frequency, progress and unplanned development, water issues (pollution, disputes) and waste management (Table 3.3). Although the vast majority of people in all groups noted one or more of these dilemmas, other problems were occasionally mentioned. Interestingly, only one farmer and one hotel owner brought up chemical use on farms as a problem; the rest of the farmers mentioned chemicals neither as a problem nor as an issue related to conservation, and they discussed their chemical use only when directly asked about it. Three biologists talked about global warming as a major problem, although they also mentioned that it has no local solutions. One business owner expressed his opinion that there were not enough tourists visiting the area.

When discussing the three dominant problems, respondents either had no solution suggestions or thought that the local government should deal with them. Although they often suggested that individuals could do their part by decreasing consumption and waste production or treating their water instead of simply dumping it in the river, these recommendations were most frequently couched in the opinion that the government had the ultimate responsibility. Most talked about things that "people" should do. When questioned about the identity of these "people," respondents implicated other business owners, farmers, or inhabitants of Monteverde.

Although the problems that the biologists discussed were largely the same as the problems cited by other groups, their perspective was different. As in other groups, they noted crowding, lack of planning, and water problems; however, unlike other shareholders, eight either

directly or indirectly implicated tourism as the ultimate cause of the majority of environmental problems in the area.

DISCUSSION

These data lead to a variety of conclusions on both a local and a global level. Definitions of conservation, perceived problems, and views on future conservation efforts in Monteverde differed depending on shareholder grouping. The data as well as the differences between groups suggest possible solutions to community problems, the probable future of conservation in the Monteverde area, and overall conclusions about the history, success, and duplicability of conservation in Monteverde.

Possible Solutions to Community Problems

Although the mentality of solving problems locally persists in Monteverde, a committee of people cannot force their neighbors to comply with local laws. Respondents' repetitive recommendations for what "people" should do suggest that many local residents see clearly what should be done in the community, but they are unable to enforce compliance. The situation speaks of the need for a strong local government to respect laws and provide leadership in planning, one capable of both creating laws and enforcing them. This government would be capable of implementing zoning laws, which would be nearly impossible for a committee to enforce, but which were highlighted by many of the community shareholders as an immediate necessity due to the unbridled growth of tourism. Local government could initiate more effective waste management techniques, hopefully both reducing waste production and dealing better with its disposal.

However, as the biologists realized, the problems that Monteverde is experiencing are symptomatic of a community that has grown too large for its own health, and the ultimate cause

is tourism. Without the recent population explosion and development associated with tourism, these issues would have remained on a small enough scale to avoid many current environmental problems. As several people noted, the ultimate answer may be to limit, or at least to plan more effectively, tourism and its associated development. In addition, education of local people could successfully encourage them to minimize their own contributions to local environmental problems. Tourists, and ecotourists especially, do not want to see dirty streets, polluted rivers, and overcrowded development. Realization of this characteristic of tourists could convince local people both to decrease their share in these problems as well as to demand that local politicians or ecotouristic businesses enforce laws preventing them.

The Future of Conservation in Monteverde

Although data related to protection show strong local pride in and support for keeping already conserved land protected, they also show that it is the biologists and, to a lesser extent, the business owners who primarily want to protect more land. However, in the case of the business owners, this wish is probably tied to tourism. This assumption is supported by the fact that the owners' definitions of conservation were generally large-scale and vague with few ties to local ecosystems, suggesting a lack of personal connection to the environment in Monteverde. On the other hand, 50% of owners mentioned tourism in their definitions.

In contrast, biologists seem to have purely scientific and utilitarian bases for expressing the desire to see more land protected. This is supported by the specificity of their responses to the question of more protection, the fact that 70% discussed conservation as a necessity, and the fact that 70% mentioned biodiversity and 90% mentioned ecosystem functioning in their definitions of conservation. Given these views, their history of activism, and the general lack of concern for additional conservation among other shareholders, it will most probably be biologists,

perhaps with some support from business owners, fighting for the expansion of protected land. Despite the opinion of many that it should be "everyone's responsibility," the historical trend of biologists and conservation organizations protecting land will likely prove to be the future pattern as well.

Conclusions

Overall, results show that ecotourism is certainly not a panacea for local problems, as it is sometimes assumed to be in other places, where scientists introduce ecotourism as the sole basis of conservation (Infield 2001). Although ecotourism does increase the income of a community, it has its own set of associated problems. Though some hotel owners and a few of the Quakers saw tourism as a help to the environment, many others, including most of the biologists and one Quaker, saw tourism as damaging to the ecosystems that it touches.

Indeed, one conclusion that can be drawn from the data in this study is that ecotourism was neither a primary nor even a secondary impetus for conservation in Monteverde; rather, it is simply a recent addendum to the economic basis of the community, taking advantage of conservation programs already in place. Although local business owners become more aware of conservation for economic reasons, positive effects of ecotourism on the local population's activism in protecting the environment have yet to be demonstrated. Excluding the biologists, most respondents are content with the amount of protected land in Monteverde now, and the majority of those that are not are content to sit back and let the government address the issue.

Rather, as a few community members perceived, it seems to have been the presence of the Quakers, with their foreign ideas about water and soil conservation, and the biologists, with their extensive knowledge base and propensity for environmental activism, that began conservation in Monteverde. The presence of these individuals led to the formation of the first

reserves, which led to the involvement of national and international conservation organizations as well as the foundation of local organizations such as the MCL. Only much later did these efforts secondarily lead to the development of ecotourism.

Moreover, Monteverde is characterized by being extremely accepting of foreign influence. The Quakers have been community members longer than many inhabitants; American biologists are neighbors, longtime residents, and members of the MCL, and a significant proportion of residents and business owners are foreign. Farmers proudly talk about their reforestation efforts and windbreaks while forgiving their forebears for their ignorance in deforesting the region, though few can explain just where their knowledge came from and just why their parents changed their minds about cutting down trees. Foreign ideas about conservation have been around so long that they have been assimilated by the local population and simply incorporated into daily life, and people have almost completely forgotten that these ideas were originally supplied by the Quakers, the biologists, and the MCL.

In summary, these data suggest that it is not a single factor like ecotourism that contributes to conservation in the area. More accurately, a complex matrix of historical, ideological, and cultural factors unique to this region in particular created Monteverde as it is today. Unfortunately, using Monteverde as a model for conservation requires the realization that it is unique in many ways and that duplicating the series of people and events that made conservation possible there would be nearly impossible in another place and time.

However, this is not to say that either ecotourism-based or scientifically-based conservation is impossible in other places. The exact events and conditions in Monteverde do not necessarily have to be replicated to create a successful conservation program. In addition, certain core factors intrinsic to the success of Monteverde may or may not be duplicable in other

areas. One of the most important of these factors is a devoted collection of locally-based biologists; another is a population with a history of self-sufficiency and openness to new ideas and viewpoints. Also, as suggested by Burlingame (2000) but not shown by this study, the lack of large-scale poverty among the original subsistence farmers in the region allowed conservation-minded people and organizations to focus on conservation rather than a campaign to improve the inhabitants' quality of life. Overall, the primarily scientific and ideological, rather than economic, basis of conservation with the secondary development of ecotourism is probably key to the success of both.

Although they perpetuated the deforestation, the original local farmers were in fact being hurt by it; however, many seem to have failed to realize this until foreign influences like the Quakers and the biologists came and pointed it out. Given this observation, conservationists in other areas could benefit from examining the effects of habitat loss on local people. Alternatively, as Mark Infield (2001) suggests, promoting conservation in the context of the local culture and values could provide a more convincing argument than economics in some areas. In a way this also plays a part in the case of Monteverde. 40% of Quakers, 50% of farmers, 20% of business owners and 50% of biologists expressed the belief that nature should be conserved because it is beautiful, tranquil, and contributes to good health, demonstrating inherent values consistent with conservationist ideas.

ANALYSIS

From this study, unlike the others, we can learn about relationships mainly from success stories rather than failures. Monteverde and its reserve complex are remarkable in many ways, and there are many factors separating it from the other case studies. First of all, the reserves in the area are private and there is little governmental input in their fate, an unusual feature unique to

Monteverde among the cases presented. Second, there were no real development projects in the area – inhabitants started off in passable socioeconomic condition, and development proceeded on its own, largely as a result of reserve establishment and the subsequent emergence of an ecotourism industry. However, the problems associated with this development are echoed in many other areas; I have heard similar complaints of sprawling development without effective zoning or waste management from people as diverse as cab drivers in rural Mexico to real estate agents in Southern California. These issues, though, are not as problematic at the other locations discussed in this paper, where development has yet to reach a stage where planning becomes an issue.

Also, unlike the regions in the other case studies, much of the deforestation in the Monteverde area happened at the hand of subsistence farmers long before conservationists stepped in. As a result the programs implemented there have been more or less equally divided between preserving the remaining habitat and reforesting that which was lost. The fact that deforestation was not always in the best interests of local farmers is also significant: this information emerged from systematic study only after reforestation efforts had improved productivity on farms, suggesting that similarly unforeseen positive results of reforestation could be realized in other areas as well.

Additionally unusual is the fact that the hand of big, international ENGO's is rarely seen, with the exception of monetarily during the establishment of the MCFP. In fact, there is little interaction between even national or local ENGO's and community members: although the MCL and the TSC alike have implemented environmental education programs as well as conservation projects, the information contained in these programs has, in the long run, been either disregarded or assimilated by the community without so much as a hiccough of dissent. In 35

substantial discourses on conservation, only a handful of people mentioned the MCL, none mentioned the TSC, and only biologists thought that conservation organizations would play a role in future environmental preservation in the area. Yet farmers spout conservationist ideas about forests, water and animals as though they've had them all their lives, when in reality their fathers and grandfathers knew little about their environment but how to cut down trees, grow crops, raise livestock, and hunt wild game. The difference between Monteverde and the other two areas described in this paper, as it emerges from this study, is this: conservation is not a foreign idea brought in recently by large-scale, paternalistic ENGO's. Rather, it has been a constant presence since the coming of the Quakers, and especially since a number of biologists took up permanent residence in the area. Conservationists are not people who pop in and out unpredictably and dictate how they think things should be, half-heartedly proposing and implementing projects that sometimes succeed and sometimes fail; they are neighbors and friends, community members and local activists dedicated to making their views and knowledge known and preserving the natural beauty of their home. Although some of the conflicts described in Part II are evident in Monteverde, most of them are between local biologists and local business owners rather than ENGO's and community residents at large, and few of these disagreements have escalated to point that wedges are driven between ideologically distinct groups.

PART IV: DISCUSSION AND CONCLUSIONS

By evaluating these examples as well as the historical patterns in local-ENGO relationships, we can come to a number of conclusions about how those relationships could be improved. Few of these improvements are restricted to the ground level of the field representative-local population

relationship, however; rather, enhancements can be made at every stage from field implementation to organizational structure.

Implementation

At the level of implementation, for example, these studies make amply clear that [a great deal of] communication is necessary to make projects successful; knowledge must be shared not only from conservationists to local people, but also from locals to conservationists. This exchange, however, is not the single element that will create successful conservation programs. Rather, the two groups must establish an open relationship that invites discussion and provides a forum for airing discrepancies and misunderstandings. Field representatives or project planners could develop this relationship by approaching local people with respect, requesting the assistance of qualified local inhabitants in conservationist activities that would employ their skills, and soliciting friendships beyond the merely professional. As difficult as it may be for some biologists and conservationists to change an inherent belief that humans are damaging to their environment, in order to successfully affect change in the long run they must entertain the idea that local and indigenous people could have valuable knowledge that must not be overlooked or dismissed.

Additionally, field representatives should state clearly while outlining a project to a local or indigenous population exactly what community members will receive in the course of implementation, thus avoiding problems of misinterpretation and the perception of broken promises when inhabitants do not receive what they expected. A proposed time frame would be beneficial: one recurring problem was that of field representatives failing to return after a certain interlude. Ideally this should be rectified by those individuals visiting regularly to address any problems, but in reality for financial reasons this is frequently impossible. Rather than being

surprised and disillusioned when this happens, locals should be apprised of the amount of time that representatives will be able to return to a community, when they will cease to do so and also the reasons why they are obligated to withdraw their help.

Project Planning

Only a portion of the effectiveness of conservation programs can be addressed solely between local people and field representatives, however. Long before fieldworkers are mired in the problems of actually executing projects, ENGO's could take measures to ensure those projects' success. The planning process could in many cases be made more efficient at several stages.

The main overarching improvement that needs to be made involves the acquisition of more information at the outset of project planning. What is the local economic structure like? What concept does the local population have of conservation? What interplay of cultural, religious, financial and other reasons account for their resource use or overuse? What kind of impact do their land use practices have on the local ecosystem? What kinds of conservation and development programs have been attempted in this community in the past? Asking these questions at the beginning of local conservationist work would have benefited both the FMB in Hill's study and the various ENGO's active in the Calakmul region in Cahn von Seelen's study. In Monteverde, answering them contributed to successful reforestation initiatives in the area. One way to obtain this information would be to involve inhabitants of the community in some stage of project planning. Anthropologists stress the need to use inherent social, economic, and ideological structures as the basis for conservation programs: bringing those structures to the planning table could incorporate them that much more easily. Regardless of how an organization acquires information about the local people in question, their social and economic norms, the

ecological impact of their community and their views on conservation, with it project planners will be much more able to develop successful projects.

This information could also aid the individuals planning a conservation program by indicating the type of people best suited to addressing the issues at hand. Are the land use practices on which the program focuses the traditional occupation of men or women? Does the situation call for someone with a background in ecology? Biology? Anthropology? Economics? Problem solving? All of these are beneficial, but depending on the project one or two could be more useful than the others.

Organizational Structure and Functioning

Despite modifications at the planning and implementation levels that could boost a program's probability of success, problems with developing and keeping local trust, effective preparation, and communication are often more deeply rooted. These recurring difficulties speak to inefficiencies within the organizations themselves, and many of these ENGO's would benefit from an internal evaluation.

Why, for example, is communication within organizations so often less than ideal? Why do field representatives and the higher executives that approve their finances frequently fail to connect, resulting in broken promises and insufficient resources? Why are the regulations enforced in the Mbaracayú Nature Reserve so irregular? Essentially, where is the kink in the bureaucratic hose where information stops like so much water? To develop trust among their local associates, field representatives cannot make promises that never come to fruition; more effective communication within the organization would prevent problems like this from arising.

In addition, ENGO's as well as the local populations with which they work could benefit from streamlining implementation. Are there consistent problem areas? What conflicts arise

periodically? How are these conflicts affected by the organization itself, at higher levels than field representatives? This query could be addressed by a trained consultant, but it would be far easier for conservation organizations to simply conduct self-evaluations. TNC, with *Traditional Peoples and Biodiversity Conservation in Large Tropical Landscapes,* admirably addressed this issue with the help of social scientists, anthropologists, and local liaisons. However, the majority of ENGO's, and presumably those with fewer human and financial resources at their disposal in particular, never go to the trouble of determining how and why their projects succeed or fail, to which the dearth of literature on the subject attests. Even without the ability to hire consultants or social scientists, though, ENGO's could make a practice of project evaluation, even to so simple an extent as a survey filled out by project implementers and evaluated to determine commonalities, problems and possible solutions. No doubt some organizations already employ measures of this kind; but the constant recurrence of conflicts and issues as simple as failures in communication suggest that even if such a system is in place, it fails to effectively address problems in implementation.

It does not help matters that ENGO's, especially those that are larger and more powerful, are often in competition for funds and projects (Chapin 2004). Although they do collaborate on some ventures, this competition creates a barrier to ENGO's viewing each other as useful resources. Together with self-evaluation, inter-organizational communication about successes and failures could benefit all involved parties.

Finally, each organization should determine its opinion on several ethical concerns raised by the potential future of conservation. The stance that an organization takes on these issues has important implications for the types of projects they will undertake and how they will execute

them. These concerns are raised in questions asked by local populations as well as the global community at large, and ENGO's should be prepared to address them as well as they can.

1. Is the "people-free park" approach to conservation ethically tenable, if it contributes to or does not improve a low quality of life among local people? Is this even an ENGO's concern?
2. Cahn von Seelen noted the questions of subsistence farmers in Mexico as to why they should change their entire way of life to combat global problems. Why *should* these individuals be obligated to make sacrifices and compromises to correct problems like global warming for which developed nations are the most responsible?
3. Must programs always be economically beneficial to a community, and should ENGO's go so far as to directly provide economic incentives for conservation?

The decisions of ENGO's on how to incorporate these issues as well as others into their missions will determine the fate of conservation in the future.

Conclusion

Essentially, conservation as a worldwide enterprise would benefit from changes in structure and operation. In many ways conservation is moving toward a new regime: one that incorporates social well-being, sustainable development, and increasing interactions with industry. For example, the biggest, most powerful NGO's are beginning to occupy slightly different roles than they have had for most of their history; increasingly, organizations like WWF, CI and TNC are relaxing their raptor-like surveillance of industry and instead entering into corporate partnerships (Esty and Winston 2006). Ideally these partnerships, which involve various levels of intensity and interaction, are beneficial to both parties and the environment as well (Rondinelli and London 2002). The lowest level of interaction intensity between ENGO's and corporations is

that of monetary support for the ENGO; at the highest level of intensity, the ideal point for ENGO's, organizations and corporations collaborate to create new and better environmental management strategies for businesses (Rondinelli and London 2002). Many critics decry what they believe to be partnerships between fundamentally opposing groups, and some voices accuse these organizations of straying from their original purpose (Chapin 2004). These critics fail to realize, however, that this is a niche that needs to be filled, and it must simply fall to other ENGO's to shift into occupying the larger organizations' former position. While subsistence farmers and indigenous communities may perpetuate harmful practices like illegal logging, intensive hunting and agriculture and overconsumption of scarce resources, industry causes pollution and environmental destruction on a global scale, and one important way to address this impact effectively is to open venues for frank discussion, sharing of knowledge, and reciprocal benefit. Businesses and conservationists, like local populations and conservationists, have a great deal to offer one another, and collaboration of this nature is a necessary step in environmental protection.

Diversifying in this way, in addition to tackling broad, worldwide issues like global hotspots and social and economic improvement, leaves these powerful organizations with lofty goals but a plethora of field-level problems, including and exceeding all those discussed in Parts II and III. One way that large, international ENGO's could address these comparative minutiae would be to establish or help to develop satellite organizations, as TNC aided in the development of the FMB and WWF helped the MCL. By establishing even small satellite organizations to administer small regions, for example, ENGO's could establish the local presence so urged by anthropologists while simultaneously micromanaging conservation goals. Operating in this way has made the MCL successful: by acting locally and adopting small-scale goals such as

preserving habitat for local wildlife, this organization and its conservationist agenda has been assimilated into the community.

Of course, this strategy is not financially or organizationally feasible in most cases, but alternative methods for addressing recurring field-level problems do exist. At the most fundamental level, for example, the evidence from the case studies presented here as well as others supports the conclusion that conservation organizations should implement fewer projects with much more effectiveness. Every failed program, every Aché pig that dies because no one would feed it, every hour that Delia spends trekking through La Guadalupe making promises that bad communication or financial mistakes do not allow her to keep is a waste of time, money, and resources. It took ten years of trial and error for ProNatura-Península de Yucatán to discover the simple secrets to successful projects, and after almost that much time the FMB was still making errors fatal to its nascent conservation programs.

A novel tactic for ENGO's to ameliorate these difficulties and increase efficiency would be to commission at least two – one man, one woman – ecological anthropologists to simply live for a time in every community in which the organization hopes to implement a large-scale or long-term project. Ideally this preparatory step should be taken before every new enterprise, but this may not be financially feasible.

This method would alleviate the vast majority of conflicts that arise between conservation organizations and local people. By living in a community for a year, for example, field representatives would ideally develop the relationships that every case study deemed so necessary. These direct and established relationships, like Hill's with the Aché, would create open forums for discussion and learning in both parties. In this way the very presence of these individuals could result in a community-wide dissemination of information and ideas about

biology, ecology, biodiversity, and conservation, much as the similar presence of biologists and Quakers has impacted Monteverde. With training in anthropology and ethnography, representatives could examine essential cultural elements like definitions and conceptions of conservation, community history, cultural norms, religion and folklore to create a multi-faceted assessment of potential environmental management strategies. Moreover, with backgrounds in biology and ecology, they would understand the pressures on and needs of the local ecosystem, avoiding simplistic mistakes akin to that cited by Hill involving the unfounded prohibition on hunting of locally abundant organisms. It would also be essential for these individuals to have a basic knowledge of economic principles, granting them the capability to accurately diagnose and address such issues as the Tragedy of the Commons and the free-rider problem.

Although this may seem to be an unnecessary investment of time, money, and human resources, in the long run such a step would provide ENGO's with the information and relationships necessary to implement successful conservation programs, saving countless years and dollars on strategies that may or may not achieve their goals.

In the end, a variety of adjustments and new tactics on every level of conservation infrastructure have the potential to improve conservation implementation by further developing the relationships between ENGO's and the local communities with which they work. However, as in all quests for self-improvement, the first step will be for conservation organizations to realize the problems inherent in their current operational strategies and make a commitment to changing them. If these organizations are willing to keep an open mind, evaluate themselves critically, and entertain the possibility of tackling conservation from an entirely new angle, there remains hope that new and ambitious goals of environmental preservation can be met. With

dedication, communication and understanding, a new regime of conservation will carry us into a bright – and forested – future.

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TABLES AND FIGURES

	Title[a,b]	Stated Management Objective	Management Objective[c,d]								
			SR	WP	SD	ES	NF	TR	ED	SU	CA
Ia	Strict nature reserve	Science	***	**	***	**	—	—	—	—	—
Ib	Wilderness area	Wilderness protection	*	***	**	***	—	**	—	*	—
II	National park	Ecosystem protection and recreation	**	**	***	***	**	***	**	*	—
III	National monument	Conservation of specific natural features	**	*	***	—	***	***	**	—	—
IV	Habitat/species management area	Conservation through management intervention	—	*	***	***	*	*	**	**	—
V	Protected landscape/seascape	Landscape/seascape conservation and recreation	**	—	**	**	***	***	**	**	***
VI	Managed resource protected area	Sustainable use of natural ecosystems	*	**	***	***	*	*	*	***	**

[a] IUCN uses six categories for classification of protected areas, according to the management objectives of the sites (IUCN, 1994). These 1995 data are taken from Green and Paine (1997), who also defined and scored the management objectives.

[b] Using data from Green and Paine, land use is apportioned in the following order to II (national parks, 4,000,605 km^2), VI (managed resource protected areas, 3,601,440 km^2), IV (habitat/species management areas, 2,459,703 km^2), and V (protected landscape/seascape, 1,057,448 km^2), with Ia, Ib, and III all having less than a million km^2.

[c] SR, scientific research; WP, wilderness protection; SD, species/genetic diversity; ES, environmental services; NF, natural/cultural features; TR, tourism and recreation; ED, education; SU, sustainable use; CA, cultural attributes.

[d] *** primary objective; ** secondary objective; * potentially not applicable; —not applicable.

Table 1.1 Protected Area Management Categories (Borgerhoff and Coppolillo 2005:31)

Shareholder	*Biodiversity*	*Ecosystems*	*Water*	*Soil*	*Forests*	*Animals*	*The Planet/The Environment*
Quakers	0	0	3	2	0	0	0
Farmers	0	0	4	3	10	5	1
Business Owners	0	0	6	0	3	4	8
Biologists	7	9	0	0	0	0	0
Total	**7**	**9**	**13**	**5**	**13**	**9**	**9**

Table 3.1. Number of people who mentioned specific elements in their definitions of conservation. Columns represent concepts relating to conservation; numbers are the number of people within each group citing that concept in their definitions of conservation.

Shareholder	*Enough Protected* (n)	*More: Government Responsibility* (n)	*More: Individual Responsibility* (n)	*More: Conservation Organization Responsibility* (n)
Quakers	14.3 (5)	0 (0)	0 (0)	0 (0)
Farmers	20 (7)	2.9 (1)	5.7 (2)	0 (0)
Business Owners	11.4 (4)	11.4 (4)	5.7 (2)	0 (0)
Biologists	0 (0)	11.4 (4)	11.4 (4)	11.4 (4)
Total	**45.7 (16)**	**25.7 (9)**	**22.9 (8)**	**11.4 (4)**

Table 3.2. Views on additional land protection in Monteverde .The n is the total number of respondents who expressed a certain response. "More" signifies that respondents thought more land should be protected. The percentage is the percentage of the total 35 people. Total percentages do not add up to 100 because two biologists thought that both individuals and conservation organizations had the responsibility of conserving more land.

Shareholder	*Water Issues*	*Waste Management*	*Progress/Unplanned Development*	*Chemical Use*	*Not Enough Tourists*	*Global Warming*	*None*
Quakers	5.7 (2)	0 (0)	2.9 (1)	0 (0)	0 (0)	0 (0)	5. 7 (2)
Farmers	5.7 (2)	5.7 (2)	14.3 (5)	2.9 (1)	0 (0)	0 (0)	0 (0)
Business Owners	17.1 (6)	8.6 (3)	11.4 (4)	2.9 (1)	2.9 (1)	0 (0)	0 (0)
Biologists	14.3 (5)	0 (0)	20.0 (7)	0 (0)	0 (0)	8.6 (3)	0 (0)
Total	**42.9 (15)**	**14.3 (5)**	**48.6 (17)**	**5. 7 (2)**	**2.9 (1)**	**8.6 (3)**	**5. 7 (2)**

Table 3.3. Frequency of problem perceptions. The n represents the number of people in each group who identified a certain problem as important in Monteverde. The percentage is the percentage of the total 35 people.

Figure 1. Map of Costa Rica, with the Monteverde area outlined in blue (GoVisitCostaRica 2007).

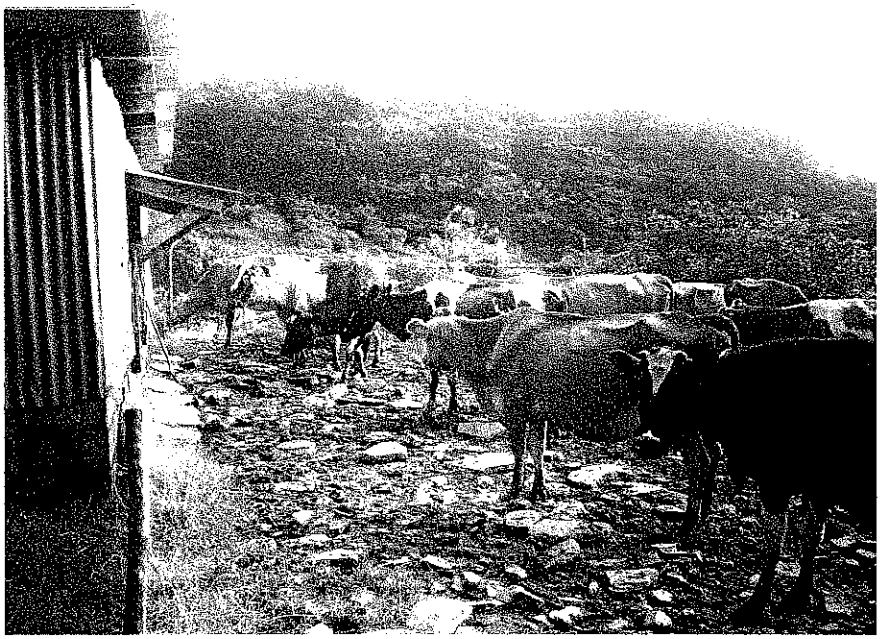

Figure 2. The dairy plant established by the Quakers continues to contribute to the income of local farmers, many of whom still milk their cows by hand.

Figure 3. Farmers bring their milk in carts or on horseback to the main road in San Luis, where a truck picks it up and transports it to the factory for processing.

Figure 4. Inside the Monteverde Cloud Forest Preserve

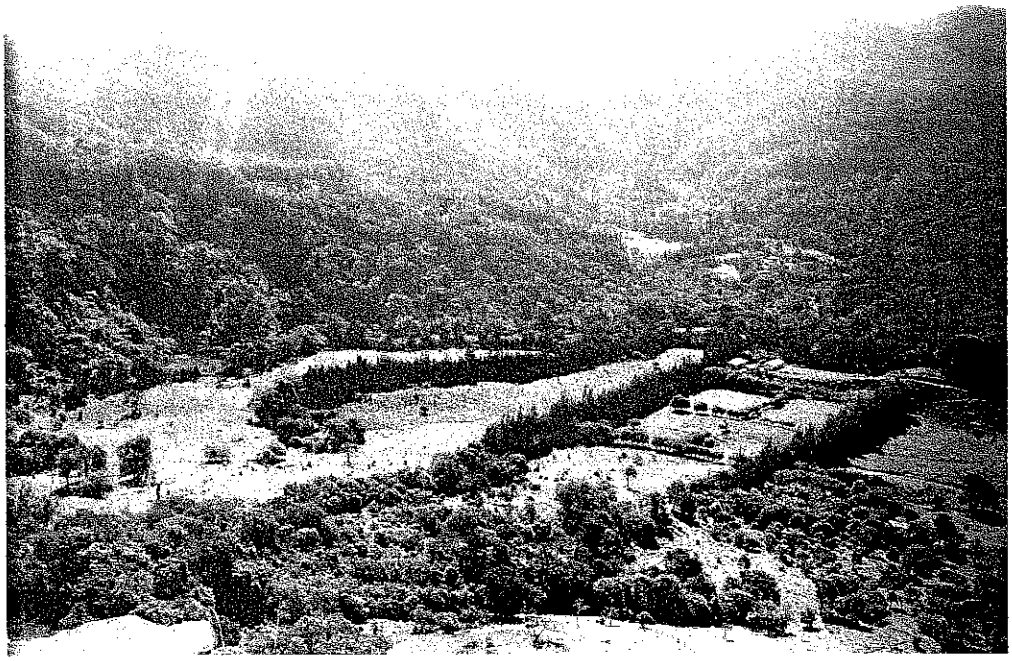

Figure 5. The San Luis Valley in Monteverde, where many subsistence farmers reside. Rows of trees are used as windbreaks and erosion prevention around pastures and agricultural land.

Figure 6. Monteverde is famous for its coffee, which is grown by a local Fair Trade co-op. Here, young coffee plants are cultivated near a greenhouse before planting.

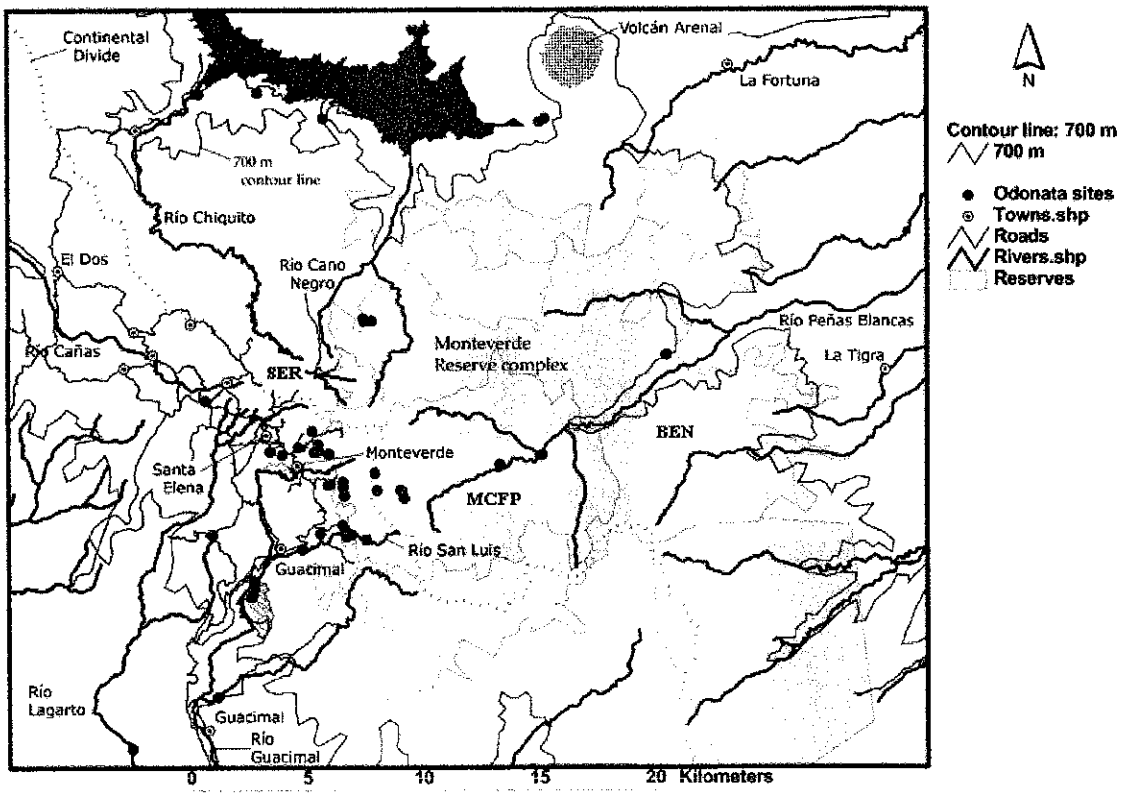

Figure 7. Map of the Monteverde Reserve Complex as well as the main surrounding towns, rivers, and roads (Haber 2005). For abbreviations, see text.

Figure 8. Nancy Johnson and her daughter in front of their family's hotel, the La Colina Lodge.

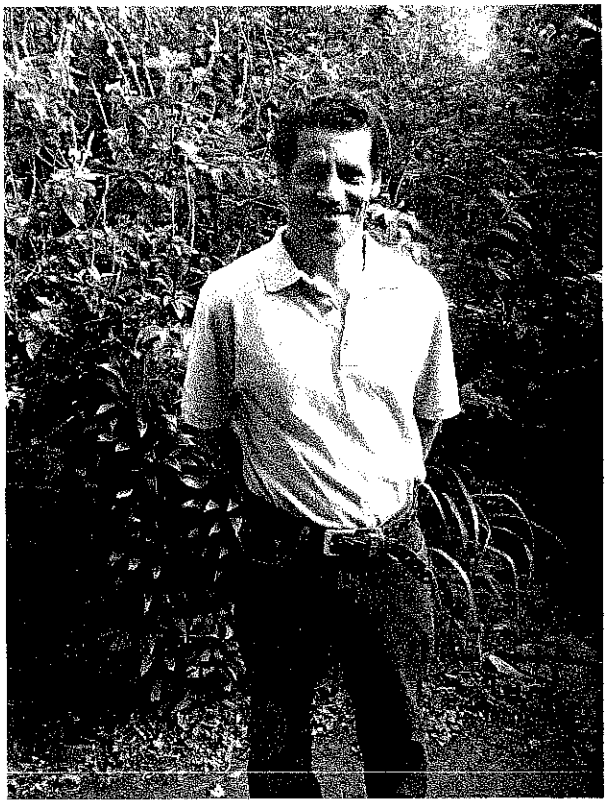

Figure 9. Gilbert Lobo, local farmer living in the San Luis Valley.

Figure 10. Richard K. LaVal, local biologist and bat specialist.

APPENDICES

APPENDIX I

List of Interview Questions
What is your:
Full name?
Age?
Last year of school completed?
Profession?
Spouse's profession?
Number of children?

1. Where were you born?
2. How do you define conservation?
3. Do you think that conservation is a part of your life? Why or why not? What do you do to conserve?
4. Why is it important to conserve?
5. Is enough land in Monteverde protected? Do you think that more should be protected? Who do you think has the responsibility of protecting it?
6. Why do you have the profession that you have?
7. What do you think are Monteverde's biggest conservation-related problems? What do you think are good ways to solve them?

APPENDIX II

List of Respondents by Group

Quakers
Mary Rockwell
Lucky Guindon
Wolf Guindon
Marvin Rockwell
Howard Rockwell

Farmers
Clímaco Castro
Gilbert Lobo
Francisco Vargas
Oldemar Salazar
Jorge Fuentes
Juan Leitón
Rafael Leitón
Mario Castro
Milton Brenes
Geovanny Leitón

Business Owners (Business)
Nancy Johnson (La Colina Lodge)
Adolfo Vargas Villalobos (Hotel Villa Verde)
Silvio Mengel (Farmacia Vitosi)
Pilar Aguvelo (Treehouse Hotel)
Galit Smilanski (Luna Azul)
Nir Smilanski (Moon Shiva)
Cindi Rodriguez (Paradise Café)
Paul Tiabenard (Hotel Montaña)
Alexis Alfaro (Albergue Bellbird)
Frederico Valverde (La Taberna)

Biologists
Nalini Nadkarni
John Longino
Kathy Winnet-Murray
Carmen Rojas
Carlos Guindon
Karen Masters
Alan Masters
Bill Haber
Willow Zuchowski
Richard LaVal