

## Ecotourism Impact on Independently Owned Nature Reserves in Latin America and Sub-Saharan Africa

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### ABSTRACT

Independently owned nature reserves are proliferating across the developing world. Nevertheless, the conservation community knows practically nothing about them. This paper examines the economic, ecological, and social impacts of ecotourism, as evidenced at thirty-two of these reserves. Ecotourism is shown to be the primary means through which reserves survive financially. This reliance provides a direct link between ecotourism and the conservation and development accomplishments of the reserves. While independently owned nature reserves are no panacea for the world's biodiversity woes, they are a viable tool for supplementing larger government conservation and development efforts and shifting control of natural resources to rural peoples.

An important trend in conservation is toward community-based conservation. Community-based conservation incorporates a variety of bottom-up approaches in which the locus of control lies with local people rather than a federal government (Western, Wright, and Strum 1994). The unifying theme across the diversity of community-based conservation approaches is that benefits, power, and decision-making lie in the hands of local residents. Additionally, humans are considered to be a permanent part of the landscape, rather than removed from it (Western 1989, McNeely 1988, Western 1984). This final point is important given that the majority of the world's biodiversity is located on lands outside of governmentally protected areas (Little 1994, Western 1994, Western 1988).

A concurrent trend in development is toward exploration of land uses that can be ecologically as well as economically viable. "Sustainable development," as defined and promoted by the World Commission on Environment and Development (1987), is the umbrella under which these efforts occur. Although experts have written volumes on the subject of sustainability (Cernea 1993, Ludwig et al. 1993, Robinson 1993, Pickett et al. 1992, Redclift 1992, Dixon and Fallon 1989, Ledec and Goodland 1988), few undeniably successful examples have emerged. Among the most promising tools are agroforestry (Nair 1993, Alcorn 1990, Steppeler and Nair 1987), non-timber forest products (Grimes et al. 1994, Balick and Mendelsohn 1992, Allegretti 1990, Salafsky et al. 1993), natural forest management (Buschbaker 1990, Hartshorn 1989), and ecotourism (Lindbergh 1993, Giannecchini 1993, Boo 1990, Healy 1989).

This article taps into both of these important trends. Its overall goal is to examine a land use option that addresses the ecological and economic requirements of sustainable development, as well as the local control of natural resources embodied in community-based conservation. The specific objective is to analyze economic, social, and ecological impacts of ecotourism, as evidenced at independently owned nature reserves.

## BACKGROUND

Many countries are turning their attention to conservation and development options on the privately owned lands that lie outside of public protected areas. In the United States, land trusts and organizations such as The Nature Conservancy specialize in purchasing or otherwise protecting privately owned land. Internationally, Colombia has recently established a sophisticated legal and organizational framework for supporting independently owned nature reserves (Cardenas 1994, Government of Colombia 1993). Likewise, the Costa Rican government recently issued a decree that officially sanctions and promotes privately owned wildlife refuges as a valued conservation vehicle (Government of Costa Rica 1993). Ecuadorians are in the process of creating a network of independent reserve operators. At least nineteen other tropical nations currently have similar reserves, and the number is rising. While there is still debate about the link between conservation and various property regimes (Hodson, Englander, and O'Keefe 1995, Mendelsohn and Balick 1995, Lynch and Alcorn 1994, Larson and Bromley 1990, Berkes 1989, Hardin 1968), the fact remains that conservation is occurring on private lands.

The initial ground breaking investigation of conservation and ecotourism on privately owned lands was conducted by Claudia Alderman at Yale University in 1989 (Alderman 1991). Alderman demonstrated that independently owned nature reserves can be a flexible and substantial complement to the conservation strategies of national governments. A follow-up study in 1993 confirmed many of Alderman's findings, and gleaned new information about these unique reserves (Langholz 1996).

Both studies focused on lands meeting the following four criteria: 1) larger than five hectares 2) not owned by a government entity 3) allow visitors, either as tourists or students and 4) managed with the intent of preserving the land in a mostly undeveloped, pristine state. The studies utilized a mail survey of ninety-seven independently owned reserves believed to exist in Latin America and Sub-Saharan Africa. This article draws from and expands upon these two studies. Its purpose is to focus on the impacts of ecotourism at

*Independently owned nature reserves can be a flexible and substantial complement to the conservation strategies of national governments.*

thirty-two independently owned nature reserves (Figure 1). It relies heavily on data collected from those reserves that participated in the 1993 study. Although the word “private” has been used previously to describe these reserves, it has been replaced in this article with “independent.” The change reflects the fact that each of these reserves is completely independent of government ownership and management, yet still accessible by a broad public in most cases.

Figure 1: List of Reserves Analyzed

Chaa Creek	Belize	
Chan Creek / Gallon Jug	Belize	
Community Baboon Sanctuary	Belize	
Monkey Bay Wildlife Sanctuary	Belize	
Rara Avis	Costa Rica	<i>Many reserves depend entirely on ecotourism revenues in order to survive.</i>
Genesis II Cloudforest Reserve	Costa Rica	
La Selva Biological Station	Costa Rica	
Reserva de El Gavilan Lodge	Costa Rica	
Hacienda Baru	Costa Rica	
Observatorio Biologica la Leona (Corcovado Lodge Tent Camp)	Costa Rica	
Selva Verde Lodge	Costa Rica	
Monteverde Cloudforest Reserve	Costa Rica	
Estacao Biologica de Caratinga	Brazil	
Santuario de Vida Silvestre	Brazil	
La Planada	Colombia	
Reserva Natural Del Alto Quindio “Acaime”	Colombia	
Bosque Protector La Perla	Ecuador	
Estacion Biologica Jatun Sacha	Ecuador	
Bosque Protector Pasochoa	Ecuador	
Explorama Inn Reserve	Peru	
Peruvian Safaris (Explorers Inn; Tambopata Reserve)	Peru	
Papillote Wilderness Retreat and Nature Sanctuary	Dominica	
Point-a-Pierre Wildfowl Trust	Trinidad	
Hato Pinero Reserva and Estacion Biologica	Venezuela	
Solio Game Reserve	Kenya	
Ngare Sergoi Rhino Sanctuary	Kenya	
Taita Hills Wildlife Sanctuary	Kenya	
Greater Kuduand Safaris	South Africa	
Ilanga Nature Reserve	South Africa	
Motswari Private Game Reserve	South Africa	
Tshukudu Game Lodge	South Africa	
Iwaba Wildlife Estate	Zimbabwe	

TOTAL = 32 Reserves in 12 Countries

## ECONOMIC IMPACTS OF ECOTOURISM

First, ecotourism provides a source of livelihood for numerous individuals associated with independently owned reserves. Put simply, the ecotourists make it possible for people to earn a living while protecting a natural area. Alderman (1991) concluded that 42 independent reserves in Latin America and Africa provide permanent and temporary employment for over 1600 individuals. In 1993, 81% (N=641) of the individuals employed by the 32 reserves in our study originated from communities near the reserve (Langholz 1996). This figure closely resembles the 84% level generated by Alderman. The combined average number of employee months was 345.2 for both Latin American and African reserves in 1993. This figure corroborates the level of employment calculated by Alderman (350.6) four years earlier.

Second, ecotourism was an important revenue source for the thirty-two reserves in the 1993 study. By design, all of the reserves included in the study allow visitors. The results, however, show the large degree of dependence on ecotourism. Only one manager said that ecotourism is “not important” to the financial viability of the reserve, and 73% (N=22) rated ecotourism as being “very important.” In fact, reserves depend on ecotourism more than any other revenue source. This dependency appears to be increasing. Alderman showed that in 1989 tourism provided 40% of the operating income for reserves. Another 19% came from private grants, and 17% came from cattle ranching or agriculture. By 1993, however, reserves had become dependent on tourism for 67% of their operating income. Grants from private sources were again in second place, with an average of 13%. Cattle or agriculture again placed third, this time with 6%. A note from a reserve in Costa Rica reflects the increased emphasis on tourism. According to the manager, “[tourism] wasn’t a reason for creation. But it happened, and later was developed as an income producer.” Extraction of forest products, loans from the private and public sector, and membership dues ranked among the least important sources of revenue.

Third, many reserves depend *entirely* on ecotourism revenues in order to survive. Sixty-six percent (N=21) rely on ecotourism revenues for 50% or more of their operating income. Nearly half (N=15) said they depend on tourism for 90% or more of their revenues, and slightly over one third (N=12) said they are 100% dependent on tourism. By cross referencing those reserves that depend 100% on ecotourism with those that were profitable during the previous year, we see that seven reserves were both profitable and completely reliant on ecotourism. The seven reserves do not appear to be distinctive from others in the study group with respect to size,

*For the record, both Claudia Alderman and I grossly underestimated the total number of reserves. I'm now convinced that Costa Rica and South Africa, for example, each have over a hundred privately owned reserves! The actual number of reserves is probably close to a thousand and growing every week.*

location, lodging capacity, prices charged, or any other discernable attribute. This complete dependence on ecotourism demonstrates that some protected areas can survive exclusively on ecotourism revenues. Although reserves can survive without government support, the question of whether or not any protected area should be required to be financially self-sufficient may have a different answer, and is beyond the scope of this study. Additionally, fluctuations and limitations in the tourism industry in Latin America and Africa undoubtedly limit applications of the independent reserve model.

### SOCIAL IMPACTS OF ECOTOURISM

Social issues surrounding any type of protected area are often the most complex and important issues to address (Little 1994, Brandon and Wells 1992, Wells and Brandon 1992, West and Brechin 1990, Rao and Geisler 1988). Likewise, tourism itself has social implications (see earlier citations). The independently owned nature reserves in the 1993 study were no exception. Although the social impact of ecotourism and independent reserves was not a focus of the research, the data reveal six important social attributes to consider.

The first social attribute is that roughly one fourth of the reserves are operated by local community groups or non-government organizations. This type of arrangement has the potential to build community and fits well with the idea of community-based conservation. Despite its ambiguous definition, community-based conservation typically requires involvement of a minimum of several households, and sometimes many communities (Little 1994). Independent reserves operated by community groups and non-government organizations fit the community-based conservation model.

Second, many of the reserves are non-profit organizations. By design, they have never earned a profit and never expect to. This may keep greed and other adverse impacts of capitalism in check. It may keep the reserves from placing more importance on money than on people and place.

Third, roughly half of the reserves are owned and operated at the family level. The foundation for community is the family unit. In an increasingly transient and urban world, a land use option that allows families to remain together, acting as stewards of their land should not be overlooked. Although the community-based conservation literature acknowledges that not all conservation should be community-based, reserves operated by families or individuals represent a variation from the normal community-based conservation model (Strum 1994).

Fourth, the reserves conduct many activities designed to provide

*The data demonstrate that it is possible for reserves to be both profitable and completely dependent on ecotourism revenues.*

integration with local communities. These activities range from charging reduced rates to local residents to providing free meals and tours to encourage visitation by community members. The reserves also hire nearly all staff from neighboring communities and purchase many of their supplies locally. One reserve maintains a profit-sharing plan with employees to increase their sense of personal investment in the reserve.

A fifth social issue is foreign ownership. Alderman showed that 67% of African reserves and 77% of Latin American reserves are owned either by nationals of the country, or combinations of nationals with foreigners (sometimes by marriage). But for the 23% (Latin America) to 33% (Africa) of reserves that are owned exclusively by foreigners, the issues are complex. The reserves can be enclaves of elites—places owned and visited only by wealthy foreigners. This can lead to resentment at the local community level and inequitable income distribution (IUCN 1993).

Related to this is the sixth social issue: displacement of rural peoples through land acquisition by the larger reserve operators. Unlike the colonialist past, or even parts of the conservation present, in which governments expel residents from newly created parks, the original land owners leave their land on their own accord and are fully compensated. Nevertheless, the social implications of these displacements warrant examination. The fact that farmers appear to have sold willingly and been given a fair price may cloud deeper social repercussions that offset conservation-related benefits. Issues of power imbalances, inequitable income distribution, and unequal access to legal processes are important to consider.

*The reserves are far from perfect. Compared to the most likely alternative land uses, however, they appear to be a worthwhile conservation and development option.*

## ECOLOGICAL IMPACTS OF ECOTOURISM

Ecological impacts, like social ones, are evident in the results even though they were not a primary focus of the study. For example, it is clear that ecotourism, more than any other force, is directly responsible for keeping these reserves operational. This, in turn, translates into protection of numerous threatened and endangered plant and animal species in a variety of habitat types. This protection of biodiversity is an important ecological impact of ecotourism.

Furthermore, it is biologically significant that over half of the reserves are adjacent to larger public protected areas. According to island biogeography theory, this extension of the amount of contiguous land under protection should help maintain biodiversity (MacArthur and Wilson 1967, Diamond 1976). Independent reserves may also act as buffer zones for public parks. Buffer zones provide

an area that reconciles protection of biodiversity with human use (Imbach and Godoy 1992, Sayer 1991). While the theoretical debate rages over the utility of buffer zones, independent reserves are quietly acting as buffer zones in many locations. In Costa Rica, the government has gone so far as to promote establishment of privately owned nature reserves as buffer zones for national parks (Boza 1993). Once again, the contributions would not be possible were it not for ecotourism.

It is possible that many of the lands currently protected by independent reserves would suffer in the absence of the reserve. Many of the reserves in this study are adjacent to vast expanses of pastures, plantations, and other human-dominated land uses. Even those reserves partially connected to a larger protected area often share borders with areas of human-dominated land use. Many of the reserves seem to demonstrate that a rainforest can provide returns to land equal to or better than more destructive and common land uses. When evaluating the advantages and disadvantages of independent reserves, it is useful to keep in mind alternative uses of the land, as evidenced by the dominant land use near the reserve.

It is also possible that ecotourism provides incentives for reserve managers to maintain the ecological integrity of the land. Reserves will remain viable only to the extent that they can attract ecotourists. It follows that the only way to draw ecotourists is to protect the ecological resources that attract them. Reserve managers stated that having "interesting ecological attractions" was more important than any other factor in accomplishing their objectives (Langholz 1996). This awareness may translate into long-term protection of such ecological attractions. A possible danger, however, is the temptation to maintain captive specimens in a zoo-like setting in order to ensure their visibility to tourists.

## CONCLUSIONS

The results point to five main conclusions. First, ecotourism makes possible the existence of numerous independently owned nature reserves in the tropics. These reserves depend on ecotourism more than on any other revenue source, and some are completely dependent on ecotourism. Second, the role of ecotourism as a driving force behind the existence of these parks demonstrates a direct link between ecotourism and biodiversity conservation. Third, the social, ecological, and economic issues surrounding independently owned nature reserves are beginning to emerge, but remain largely unexamined. Aside from basic descriptive information about size, habitat type, and job creation, we know little about their impacts. Fourth, it is possible for a reserve to exist solely on ecotourism rev-

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enues, as evidenced by reserves in this study. Although reserves can survive without government support, the question of whether or not any protected area should be required to be financially self-sufficient is likely to have a different answer, and is beyond the scope of this study. Finally, independent reserves and the ecotourists that support them are no panacea for the world's conservation and development woes. They are but one small way of supplementing larger government conservation efforts, and shifting control of natural resources to rural people. The number of independent nature reserves, like ecotourism in general, will continue to grow, regardless of what the conservation community thinks or does. Our challenge, then, is to channel that growth in a way that safeguards both biological integrity and human dignity.

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