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# Ecotourism as a driver of forest conservation on small farms in Costa Rica

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## ABSTRACT

Conservation of fragmented forest on private land is instrumental to long-term protection of tropical biodiversity. However, few incentives exist for small landowners to conserve. This study addresses ecotourism as an incentive for forest fragment conservation. Small farmers were interviewed to determine the extent of land in regeneration or protection and the ecotouristic activities on each property. The data suggest that a greater percentage of land is in regeneration on farms with small-scale tourism ( $20\% \pm 10.1$ ) than on farms with large-scale tourism ( $12\% \pm 6.0$ ) and no tourism ( $5\% \pm 2.1$ ; Kruskal-Wallis Test,  $H = 6.0673$ ,  $p = 0.0481$ ,  $N = 19$ ). I conclude that of the farms employing tourism, three types of private property classifications exist: 1) land that would be conserved with or without tourism, 2) land whose maintenance benefits from ecotourism directly, and 3) land with tourism that is not ecological, but could still contribute to conservation. Each property type is addressed with a specific conservation strategy that could enhance long-term biodiversity protection in the Monteverde area.

## RESUMEN

La conservación del bosque fragmentado en tierras privadas es responsable de la protección a largo plazo de la biodiversidad tropical. Sin embargo, hay pocos incentivos por terratenientes pequeños para conservar. Este estudio aborda el ecoturismo como un incentivo para conservación de bosques fragmentados. Pequeños agricultores fueron entrevistado para determinar la extensión de tierra en regeneración o protección y las actividades eco turísticas en cada propiedad. Los datos sugieren que hay un porcentaje mayor de tierra que está en regeneración en fincas con turismo en pequeña escala ( $20\% \pm 10.1$ ) que en fincas con turismo a gran escala ( $12\% \pm 6.0$ ) o sin turismo ( $5\% \pm 2.1$ ). Yo concluyo que de los fincas que están empleando turismo, hay tres tipos de propiedades privadas: 1) tierra que estará conservado con o sin ecoturismo, 2) tierra cuyo mantenimiento depende del ecoturismo directamente, y 3) tierra con turismo que no es ecológico, pero puede contribuir a conservación todavía. Cada tipo de propiedad está dirigida con una estrategia específica de conservación que puede ser responsable la protección a largo plazo de la biodiversidad en Monteverde.

## INTRODUCTION

The Mesoamerican hotspot, of which Costa Rica is a part, contains exceptional concentrations of endemic species, and is experiencing unresolved habitat loss (Myers 2000, Velozo 2000). Despite the fact that Costa Rica is touted for its conservation efforts, largely due to the extensive network of national parks covering more than 12% of the country (Boza 1993) and an additional 13% in privately owned reserves (Velozo 2000), a significant amount of deforestation is still occurring (Sanchez-Azofeifa et al. 2001).

Historically, the national government of Costa Rica gave farmers undeveloped land if they transformed forest into agricultural production (Velozo 2000). As a result, deforestation rates for all life zones in Costa Rica were greater than 7% per year between 1877-1983, higher than any earlier period ( $< 2\%$  per year), which significantly reduced the amount of primary forest cover (Sader and Joyce 1988). Concurrently, 60% of land ownership was distributed among private owners while only 40% remained public (Velozo 2000). Presently, more than 71% of

forest area is under private ownership (Butler 2006, Sanchez- Azofeifa et al. 2001). Nevertheless, biodiversity exists in the exceedingly fragmented forests often owned by small farmers (Warner 2005). It is imperative that forested land on private property outside of parks be preserved to achieve effective biodiversity protection (Boza 1993, Cruz 2003, Endicott 1993, Sanchez-Azofeifa et al. 2001). Yet, few incentives are offered to small farmers for protection or reforestation of these remnants.

One available incentive is Costa Rica's Payments for Environmental Services program (*Pagos de Servicios Ambientales*, PSA). PSA is a program implemented by the *Fondo Nacional de Financiamiento Servicios Ambientales Forestal* (FONAFIFO). Since 1997, it offers landowners a yearly reward of \$50 per hectare of protected forest (Butler 2006). In addition, the Forest Project of the Foundation for the Development of the Central Volcanic Mountain Range (FUNDECOR) manages two other components of the program, reforestation and forest management, such as selective logging and agro-forestry. Each has helped to sustainably maintain 13,000 hectares of forest (Butler 2006, Zbinden and Lee 2005). It has been shown, however, that farm size, human capital and household economic factors influence participation in the program. These factors favor large farm and forest owners limiting access to the more widespread small farmer (Zbinden and Lee 2005). Some scientists fear that payment for ecological services, such as water, carbon and biodiversity, could even displace small farmers. Legal frameworks for trading these services have not been established and it is suspected that transaction costs will be high suggesting that industrial plantations will be able to more easily provide these services than small farmers (Lamb et al. 2005).

Carbon credits are one common form of payment for ecosystem services. On a global level, the BioCarbon Fund, run by the World Bank, delivers carbon finance to many developing countries that sequester or conserve greenhouse gases (World Bank 2007). However, the Carbon Trading Real Estate market in Costa Rica is not very developed due to higher prices than other Latin American countries (Drost 2007). Currently, finances from the BioCarbon Fund support only one project, PSA, and the money serves only to expand on a specific area of the already implemented program (World Bank 2007). Therefore, not only are incentives limited, but also those that are available are difficult to obtain by small farmers.

Many small farmers have turned to ecotourism as a means of obtaining extra income, which, in turn, allows them to continue protecting forest remnants (Cruz 2003). Lowman (2004) defines the objectives of ecotourism as providing a nature-based, environmental education experience for visitors while managing this experience in a sustainable fashion. Additionally, ecotourism ought to optimize benefits to local people while minimizing environmental impact. More specifically, ecotourism in Costa Rica is defined by the acknowledgment that wildlife is worth more alive than dead and more attractive to visitors when in its natural habitat reaffirming the value of biodiversity protection (Henderson 2002). Still, some environmentalists believe that the economic benefits of ecotourism are not sufficient enough to motivate farmers to practice true conservation (Dasenbrock 2001). For example, Garen (2000) asserts that although ecotourism is noteworthy, environmentally it does more harm than good. Negative environmental impacts resulting from ecotourism include overuse, haphazard development, visitor overcapacity and a lack of conservation security over the long-term due to the fluctuating nature of tourism (Weaver 1998). Ecotourism as an incentive to conserve cannot be ignored though. The concept of private land conservation through ecotourism is currently a major topic of conversation in Costa Rica due to the proposal of *Ley para la Promoción de la Conservación en Tierras Privadas*. Approval of this proposal would allow a greater amount of private

landowners to obtain economic incentives from ecotourism (Madrigal 2002). The issue of whether ecotourism leads to habitat protection and reforestation due to this economic and other incentives has not been explored.

Here I assess land use on small farms in order to determine the amount of land conserved and regenerating on each property. In addition I study how important ecotourism is as motivation to protect or reforest land by conducting interviews with landowners. I expect to find a greater percent of conserved and regenerating land on farms that employ tourism due to the economic incentive it provides.

## **METHODS**

### **Study Site**

Interviews were conducted with 19 small farmers in several small communities in Monteverde, Costa Rica and the surrounding area. These communities included: Cañitas, Cebadilla, La Cruz, San Luis and Monteverde. Farms were selected at random throughout the communities though they were generally chosen based on availability. Each interview comprised of two oral surveys (described below, see Appendix). The Monteverde region was an ideal location for this study because it is considered one of the premier ecotourism-orientated communities in Central America due to its large Cloud Forest Reserve. The Reserve, established in 1972, includes 10,500 hectares and is the main ecotouristic attraction in Monteverde (Monteverde 2007). The entire Monteverde Reserve complex, including Bosque Eterno de los Niños and the Santa Elena Reserve is approximately 29, 000 hectares (Nadkarni and Wheelwright 2000). It is a patchwork of private reserves that, together, make up the largest private reserve complex in Central America (Montverde 2007). It houses 3,000 species of plants including 750 species of trees, 400 species of birds, 160 species of amphibians, 120 species of mammals, has more named species of orchids than any other place on Earth and is an important repository for montane cloud forest biodiversity in the region (Nadkarni and Wheelwright 2000). Although originally only attracting scientists, the presence of the Reserve quickly created ecotourism in the region. Bird watchers were the first to be drawn to the area after scientists began publishing literature on the unique bird species contained within the Reserve. The influx of visitors continued to grow as Monteverde increased in popularity due to literature and media (Nadkarni and Wheelwright 2000). More than thirty years after the Reserve was formed, the growth of ecotourism has been unparalleled, drawing in more than 74,000 tourists per year (Haley 2006). Sociologists, such as Forster (1964) assert that by providing a new economic base for a region, the development of one large primary tourism endeavor will result in growth of smaller tourism ventures. This is what has occurred in Monteverde (Burnett 1997). Small single-family farms incorporating ecotouristic components, such as the ones interviewed in this study, are now the region's economic mainstay (Nadkarni and Wheelwright 2000).

### **Land Distribution**

The first survey, *Encuesta del Uso de la Tierra and Distribución del Bosque* (Appendix), was used to obtain data regarding: the overall size of the farm, the amount of land in regeneration, if any, and the amount of land conserved, if any. No definition of regenerating or conserved land was offered to the farmers. The length of regeneration and conservation and the prior land use

was also documented. In a few cases, small fragments of land the owner considered to be in regeneration or conserved, generally bordering water sources or serving as windbreaks, were left out of the data because the landowner was unable to quantify the number of hectares.

The 19 farms, ranging in size from two hectares to 130 hectares, were then separated into 3 categories: no tourism (n = 7), small-scale tourism (n = 6), and large-scale tourism (n = 6). Farms were initially separated into whether or not they employed tourism based on the response to the *Encuesta del Ecoturismo* survey (see Ecotourism Drivers). Those farms with tourism were broken down further, based on the frequency of tourism each landowner estimated. With one exception, this break down corresponded to the type of income ecotourism served as (Table 1).

TABLE 1. Income of ecotourism compared to agriculture or other means.

Income	Primary	Secondary	Equal
Small Scale	0	5	1
Large Scale	5	1	

### Drivers of Ecotourism

A second survey, *Encuesta del Ecoturismo* (Appendix), was conducted in order to understand what motivated farmers to develop ecotourism on their land. Farmers were first asked whether or not they employ ecotourism activities on their property. Those farms without ecotourism were asked to select a reason why they have chosen not to employ ecotourism from the list provided (Appendix).

The subset of farmers who participated in ecotourism were asked a series of questions regarding: their motivation for employing ecotourism, how long they have employed ecotourism on their property, the types of activities employed, if they received training, whether or not ecotourism is a primary or secondary source of income to other means, and how ecotourism on their property relates to conservation (see Appendix for additional questions). In addition, a workshop on sustainable farming and agro-tourism, provided by the Monteverde Coope for its farmers and guides, was observed and participated in. This aided in a better understanding of selective ecotourism practices in the area, as well as the type of training that exists. Once all data were acquired, comparisons were made between small-scale and large-scale farms in order to determine any relationships.

## RESULTS

### Land Distribution

The average percent of land in regeneration was significantly greater on private properties where the landowner employed small-scale ecotourism activities (Fig. 1, Kruskal-Wallis Test,  $H = 6.0673$ ,  $p = 0.0481$ ,  $N = 19$ ). Although the average percent of conserved land appears to follow the same trend, the percentages are not statistically different (Fig. 1, Kruskal-Wallis Test,  $H = 0.0174$ ,  $p = 0.9913$ ,  $N = 19$ ). Nevertheless, the raw data and Figure 1 illustrate that a greater percent of land is in regeneration or in conservation on individual farms with small-scale ecotourism activities ( $20\% \pm 10.1$  and  $61\% \pm 12.4$  respectively) followed by farms with large-scale ecotourism ( $12\% \pm 6.0$  and  $30\% \pm 11.4$  respectively) and finally farms without any tourism ( $5\% \pm 2.1$  and  $21\% \pm 7.4$  respectively).

It is important to note that the areas both in regeneration and in conservation are highly fragmented in almost every case given that all but six of the farms were less than 20 hectares.

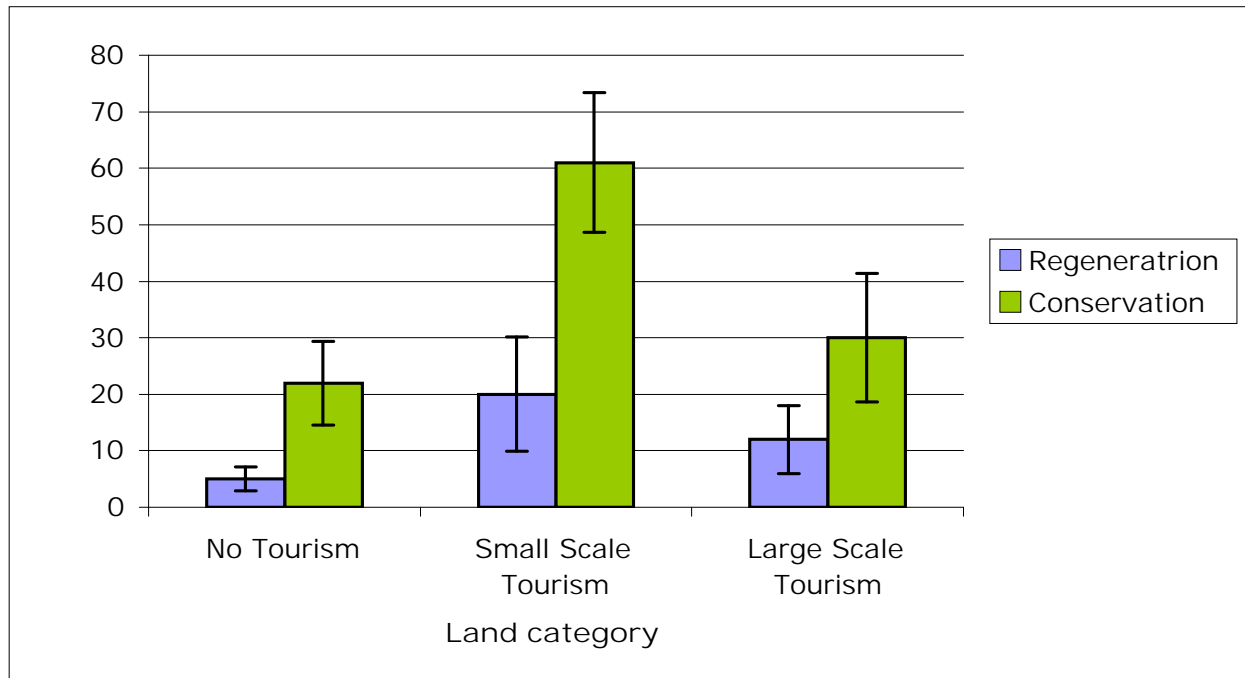


FIGURE 1. Total percent of land regenerating (SE = 2.1, 10.1, 6.0 respectively) and conserved (SE = 7.4, 12.4, 11.4 respectively) on all farms with no tourism (n = 7), small-scale tourism (n = 6) and large-scale tourism (n = 6).

Small farmers were generally able to provide an estimate of the time their land had spent in regeneration (Table 2) and in conservation (Table 3). No definition was ever provided to farmers regarding the difference between regenerating and conserved land nor did a farmer ever

TABLE 2. Number of farms, from those sampled (N = 19), with regenerating forest and the corresponding length of time each portion of land has spent in regeneration.

	< 5 yrs	5-10 yrs	11-15 yrs	16-20 yrs	None
No tourism	0	2	0	1	4
Small scale	1	2	1	1	1
Large scale	0	1	1	1	3

question the difference. However, from the responses regarding the length of time a portion of land had been regenerating or conserved, a definition has been formed for the purpose of this

study. The growth period for land described as regenerating was always less than twenty years (Table 2) and was often previously used as pastureland. Conserved land was described as existing for approximately 20 years or more (Table. 3, three farms noted 18-19 years) and containing “primary forest trees.” In several instances, the landowner could state with certainty that the conserved forest on his property existed when he purchased the land and has remained in conservation during his ownership. Since the length of time the forest was conserved prior to his ownership was unknown, that period of time was not recorded (e.g. Current owner purchased property with a portion of conserved land 41 years ago. He has conserved the forest ever since, but does not know the length of time it was in conservation prior to his arrival. The length of

time conserved was recorded as 41 years, although it was longer in reality). Therefore several approximations in Table 3 may be an underestimate.

TABLE 3. Number of farms, from those sampled (N = 19), with conserved forest and the corresponding length of time each portion of land has spent in conservation.

	< 20 yrs	20-30 yrs	31-40 yrs	41-50 yrs	> 50 yrs	None
No tourism	2	2	1	0	1	1
Small scale	1	1	0	0	2	2
Large scale	0	0	0	2	1	3

### Drivers of Ecotourism

All of the properties sampled employed ecotourism as a result of the general increase in tourism in the area. This is apparent in the relative novelty of the ecotouristic enterprises. All but one farm began employing ecotourism less than four years ago and the farm that has been employing tourism for longer has only moved into large-scale ecotourism within the last few years.

The motivating factors for employing tourism were consistent for both small-scale and large-scale tourism even though this question required a free response. The responses offered were all some variation of the following: 1) protect and conserve land for the future generation, 2) share diversity and knowledge about natural resources with others, and 3) obtain more income. Small-scale and large-scale touristic farms responded similarly. Half stated a response related to conservation while the other half cited economics as the main driving factor. In the case of economics, several farmers noted that ecotourism was a method of obtaining adequate income to prevent them from having to sell the land due to insufficient income from agriculture. In a few instances, a combination of the three responses was noted. Whether increased income was the primary factor did not directly coordinate with the type of income ecotourism served as (see Table 1). Unanimously, farmers asserted that they would continue protecting as much forest as possible, even without ecotourism, but that conservation of the forest benefited from ecotourism both directly and indirectly through: increased resources to allow more land to be set aside for conservation, opportunities to educate visitors about the importance of tropical conservation, and local reforestation projects.

Of the farms employing tourism, all but two proved to be ecotouristic enterprises according to Lowman's (2004) definition, which requires the experience to be nature-based, educational and managed in a sustainable fashion. One coffee farm and a sugar farm relied on these monocultures to provide a traditional cultural experience but are not ecological in nature. Two questions, addressing the types of activities employed (see Table 4) and the incorporation of an educational component were used to make the distinction between ecotourism and non-ecotouristic endeavors. All but one farmer answered yes to the question regarding the incorporation of an educational component. The farmer that answered no asserted that they are working on that aspect of their endeavor and will begin to incorporate education into their tour as soon as they gain more experience with tourism. Ecotourism sustainability, Lowman's second objective of ecotourism, was not measured directly in this study. It was noted that the majority of small-scale farmers had experience with a local conservation organization or received training from Coope Monteverde on sustainable agriculture, particularly agro-tourism. This method of

farming can contribute to greater degree of conservation but does not necessarily promote conservation by itself.

TABLE 4. Types of ecotouristic activities employed by farmers in Monteverde, Costa Rica (N=19). Illustrates that farms with large-scale tourism rely heavily on farm tours.

	Lodging	Bird watching	Trails	Farm tours	Canopy tour	Waterfall visits	Night walks	Other
Small scale								
1			x					
2			x			x		
3				x				
4	x		x					
5				x				
6			x	x				x
Large scale								
1				x				
2			x	x	x	x		x
3	x	x	x	x		x		x
4			x	x			x	x
5				x				
6			x	x				

### Additional Observations

In addition to the results provided directly by the survey responses, several observations were made through conversation and examination of each property. The first observation is that there is a general consensus amongst small landowners that protecting the forest is important. Secondly, not all landowners had the same concept of what conservation is. The definition varied in a few cases amongst individuals from different generations and individuals with different economic mindsets. For example, on one large-scale tourism farm, an elderly gentleman, the original property owner, stated that there was no conserved forest on the property with the exception of the slopes bordering the stream. On the other hand, the young man running the tourism operation on the same property considered the coffee plants, the main tourist attraction, to be conserved land. Finally, of the farms interviewed where examination of the property was permitted, a general observation was made that the areas conserved and in regeneration are highly fragmented. Signs of disturbance, such as cleared paths, a crowded understory filled with saplings and patchy canopy were all evident. In many cases, these disturbances were the result of manipulating the land to make it more suitable for the touristic activities employed on the property.

## DISCUSSION

From the results of this study, I have determined that there are three types of private properties with tourism projects in Monteverde. Each classification can benefit from a focused



conservation plan. Specific strategies, in conjunction with a more unified understanding of the sustainable ecotourism, will maximize conservation efforts by the community. The first type of property is land that would be conserved with or without tourism because it is not providing any significant service or acting as a detriment to the landowner. The second type is land whose maintenance benefits from ecotourism directly. Lastly are the properties that are not actually ecotouristic, but could increase their benefit to the environmental by functioning in a sustainable manner with regards to both agriculture and tourism.

In recent years, conservation easements have been created in Monteverde to protect specific key habitats such as that of the Resplendent Quetzal (Schwartz 2001). Conservation of properties with land that would be conserved with or without tourism ought to be targeted using this strategy. If all the properties with land that has been conserved for 40 years or more (Table 3) were put under easement, just under 50% of the conserved land recorded in this study would be under long-term biodiversity protection. An easement is restrictions placed on individual properties in order to protect its associated resources. Restrictions necessary to protect biodiversity are implemented ensuring that the landowner still owns and is able to use the land (Nature Conservancy 2007). One significant advantage of a conservation easement is that restrictions remain effective even if ownership changes. Therefore, unlike Costa Rica's PSA program which is only effective for periods of five to ten years, conservation through easements remains for generations so long as a municipal or community organization continues to enforce the regulations (Nature Conservancy 2007, Velozo 2000).

With regards to property directly benefiting from ecotourism, specific measures need to be implemented to ensure that the negative side effects of tourism do not undermine conservation of the land where ecotourism is employed. Negative effects can be induced by a number of factors including, but not limited to, visitor overcapacity, haphazard adjacent development and inadequate enforcement of protected areas (Weaver 1998). A community organization, such as the Monteverde Conservation League, ought to create, implement and oversee the enforcement of regulations on ecotourism that ensure the greatest social, economic and environmental benefit to the landowner and the community. Prior studies have demonstrated that tourists would be willing to pay an extra US\$1 if it contributed to conservation efforts, which has led to the suggestion of a flat rate ecotax in Monteverde (Haley 2006). An ecotax, by definition, is designed to pay for the negative impact of humans on the environment (Backhaus 1998) and could therefore be a justified source of funding for the education of farmers and enforcement of ecotourism regulations. One component of the education of farmers that needs attention is the ways ecotourism can benefit conservation. Farmers' responses suggest that there is a strong belief that conservation requires increased financial resources and opportunities to educate outsiders. From the viewpoint of biodiversity, these mentalities are human-centric. Although these factors can contribute to conservation there are ways farmers can increase biodiversity protection without the contribution of these anthropological factors. Addressing these issues would also help to unify the understanding of what conserved land is. Eliminating the confusion seen in a few cases in this study could only increase the effectiveness of conservation in the area.

Lastly, examination of the survey on ecotourism leads to the conclusion that two large-scale tourism farms were not practicing ecotourism. Observations suggest that the large coffee and sugar crops of these two farms instruct tourists on how each crop is farmed but do not contribute to conservation. Although neither directly promotes conservation, they both rely on ecotourism in the area to supply tourists and ought to contribute to biodiversity protection. Environmental awareness on these non-ecological tourism farms could be achieved through

common and consistent education on sustainable agriculture, which would contribute to biodiversity protection in spite of a lack of conservation on the properties.

Many farmers cited conservation as their primary motivation for employing ecotourism, which supports the belief that individual landowners are instrumental in preserving the tropics (Cruz 2003, Lamb et al. 2005, Vaughan 2000). In addition, all landowners interviewed believe that ecotourism directly contributes to conservation on their land suggesting that ecotourism can serve as a driver for conservation.

Those farms benefiting from the establishment of the Reserve and its subsequent ecotourism could contribute to increased conservation in the area by increasing connectivity with the Reserve. Such an effort would require the guidance of biologists to create strategic biological corridors on these properties. Although fragmentation can be harmful to biodiversity, proximity and connectivity to a large site can significantly increase species richness due to high immigration rates (Aldrich 1998, Bruun 2000). This in turn, increases the ecosystem stability and will enhance forest preservation in the Monteverde region (Worm and Duffy 2003). Connectivity in Monteverde can be accomplished by designating specific areas in need of regeneration and indicating the importance of continued conservation in other areas. Many farmers cited intent to convert more land to regeneration and conservation in the future given the increased success of ecotourism. Although these sentiments were not equally shared amongst all farmers, it is an attitude that ought to be capitalized on.

Spatially targeting property for landscape preservation has proven to be a more efficient method of conservation than extensive regulation (Wear et al. 1996). In addition, effective conservation of biodiversity and key restoration of ecological function operate at the landscape level and depend on separately restoring sites that complement each other. While individual conservation efforts by landowners are noteworthy, they are essentially unlikely to achieve an optimal outcome (Lamb et al. 2005). This suggests that the contribution of land conserved by farmers in this study to long-term biodiversity protection of the Monteverde area is not optimal. Therefore, by approaching conservation at a landscape level (e.g. stabilizing areas with ecological function on individual properties) not only will biodiversity conservation be enhanced, but ecosystem function will also improve resulting in direct benefits to the landowner.

The lack of statistical significance for conserved land (Fig. 1, Kruskal-Wallis Test,  $H = 0.0174$ ,  $p = 0.9913$ ,  $N = 19$ ) can be explained by a small sample size, variation in farm area, and the fact that not all farms contain both regenerating and conserved land. I expect that with a greater resource pool, more farms could be sampled and analyzed resulting in the same trend but with greater accuracy.

Furthermore, I suggest that future studies of conservation on small private ecotouristic farms measure sustainability of the activities directly so that full compliance with the objectives of ecotourism can be established. In addition to measuring sustainability of ecotourism, biodiversity indicators need to be measured to determine the effectiveness of ecotourism in and around conserved areas. In addition, comparing a sample of small farms with ecotourism in Monteverde to another area less renowned for conservation is recommended. This type of study would aid in determining whether or not ecotourism in Monteverde could serve as a model of conservation strategy for other areas in Costa Rica and globally.

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## APPENDIX

### Encuesta del Uso del Tierra and Distribucion del Bosque

Nombre:

Fecha:

Dirección del Finca:

Numero:

1. Tiene bosque que están en regeneración en su propiedad?

Sí, conteste de la a. a la e.

- a. # Ha de la finca en total? \_\_\_\_\_
- b. # Ha para la agricultura/ pastizal? \_\_\_\_\_
- c. # Ha en regeneración? \_\_\_\_\_
- d. Hace cuanto años empezó la regeneración? \_\_\_\_\_
- e. Cuál era el uso antes de regeneración? \_\_\_\_\_

Foto #: \_\_\_\_\_, Categoría: \_\_\_\_\_

Descripción: \_\_\_\_\_

---

No, conteste de la f. a la i.

- f. # Ha de la finca en total? \_\_\_\_\_
- g. # Ha para la agricultura/ pastizal? \_\_\_\_\_
- h. # Ha en otro uso? \_\_\_\_\_, especificar cual: \_\_\_\_\_
- i. Solía tener bosque conservado en su propiedad?
  - Sí, describe el uso actual de esta tierra: \_\_\_\_\_
  - No

Foto #: \_\_\_\_\_, Categoría: \_\_\_\_\_

Descripción: \_\_\_\_\_

---

2. Tiene bosque que está conservado en su propiedad?

Sí, conteste de la j. a la n.

- j. # Ha de la finca en total? \_\_\_\_\_
- k. # Ha para la agricultura/ pastizal? \_\_\_\_\_
- l. # Ha en conservación? \_\_\_\_\_
- m. Hace cuanto años empezó la conservación? \_\_\_\_\_
- n. Cuál era el uso antes de conservación? \_\_\_\_\_

Foto #: \_\_\_\_\_, Categoría: \_\_\_\_\_

Descripción: \_\_\_\_\_

---

No, conteste de la o. a la r.

- o. # Ha de la finca en total? \_\_\_\_\_
- p. # Ha para la agricultura/ pastizal? \_\_\_\_\_
- q. # Ha en otro uso? \_\_\_\_\_, especificar cual: \_\_\_\_\_
- r. Solía tener bosque conservado en su propiedad?
  - Sí, describe el uso actual de esta tierra: \_\_\_\_\_
  - No

Foto #: \_\_\_\_\_, Categoría: \_\_\_\_\_

Descripción: \_\_\_\_\_

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## Encuesta del Ecoturismo

Nombre:

1. Incorpora, o incorporará, actividades del ecoturismo en su finca?

Sí, conteste de la a. a la k.

a. Hae cuanto años empezó, o cuando empezará, a emplear, el ecoturismo? \_\_\_\_\_

b.Cuál es su motivación para emplear ecoturismo? \_\_\_\_\_

c. Que tipos de actividades emplea? (Marque todas las que aplican)

Hospedaje

Observación de aves

Senderos

Visitas a la finca, Que tipo del cultivo (café, orgánico, etc)? \_\_\_\_\_

Visitas a “canopy tours”

Visitas a cataratas

Caminatas nocturnas

Otras: \_\_\_\_\_

d. Incorpora un componente de educación en sus actividades de ecoturismo?

Sí, describa: \_\_\_\_\_

No

e. Siente que el ecoturismo en su propiedad contribuye a la conservación?

Sí, describa: \_\_\_\_\_

No

f. En comparación con la agricultura o otro trabajo, el ingreso de ecoturismo es?

Secundario

Principal

g. Tiene la intención de cambiar el uso de algunas de sus tierras de agricultura/  
pastizal a conservada/ regenerada porque por el éxito del turismo?

Sí

No

h. De donde obtuvo la idea del ecoturismo?

Observación propia

Vecino/ Amigo

Organización Social o de la Comunidad

Otra: \_\_\_\_\_

i. Recibió entrenamiento o educación sobre la industria del ecoturismo?

Sí, describa: \_\_\_\_\_

No

j. Recibe dinero de Pago Servicios Ambientales por sus tierras?

Sí, describa: \_\_\_\_\_

No

k. Sin ecoturismo, contuaría protegiendo los bosque por conservación/  
regeneración?

Sí

No, que haría con ellos? \_\_\_\_\_

No, conteste de la a.

a. Cuál es el razón principal para no emplear ecoturismo?

- Yo tengo bosque protegidos, pero no tengo interés
- No tengo tierra suficientes
- No hay apoya financiero para empezar
- No hay información de cómo empeza
- Otro, Especificar: \_\_\_\_\_

Notas: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Land Use and Forest Distribution Survey

Name:

Date Interviewed:

Farm Location:

Contact Number:

3. Do you have regenerating forest on your land?

Yes, please answer a-e

s. # Ha the farms contains in total? \_\_\_\_\_

t. # Ha for farming/ pastureland? \_\_\_\_\_

u. # Ha regenerating? \_\_\_\_\_

v. When did you set aside this land for regeneration? \_\_\_\_\_

w. What was the land's prior use? \_\_\_\_\_

Picture #: \_\_\_\_\_, Ranking: \_\_\_\_\_

Description: \_\_\_\_\_  
\_\_\_\_\_

No, please answer f-i

x. # Ha the farms contains in total? \_\_\_\_\_

y. # Ha for farming/ pastureland? \_\_\_\_\_

z. # Ha other use? \_\_\_\_\_, please specify: \_\_\_\_\_

aa. Did you ever have regenerating forest on your land?

Yes, please describe what this land is used for now: \_\_\_\_\_

No

Picture #: \_\_\_\_\_, Ranking: \_\_\_\_\_

Description: \_\_\_\_\_  
\_\_\_\_\_

4. Do you have conserved forest on your land?

Yes, please answer j-n

bb. # Ha the farms contains in total? \_\_\_\_\_

cc. # Ha for farming/ pastureland? \_\_\_\_\_  
dd. # Ha conserved? \_\_\_\_\_  
ee. When did you set aside this land for conservation? \_\_\_\_\_  
ff. What was the land's prior use? \_\_\_\_\_  
Picture #: \_\_\_\_\_, Ranking: \_\_\_\_\_  
Description: \_\_\_\_\_  
\_\_\_\_\_

No, please answer o-r  
gg. # Ha the farms contains in total? \_\_\_\_\_  
hh. # Ha for farming/ pastureland? \_\_\_\_\_  
ii. # Ha other use? \_\_\_\_\_, please specify: \_\_\_\_\_  
jj. Did you ever have conserved forest on your land?  
 Yes, please describe what this land is used for now: \_\_\_\_\_  
 No  
Picture #: \_\_\_\_\_, Ranking: \_\_\_\_\_  
Description: \_\_\_\_\_  
\_\_\_\_\_

## Ecotourism Survey

Name: \_\_\_\_\_

2. Do you incorporate, or plan to incorporate, ecotourism activities on your farm?

- Yes, please answer a-k
- a. When did you begin, or plan to begin, employing ecotourism? \_\_\_\_\_
- b. What is your motivation for employing ecotourism? \_\_\_\_\_
- c. What types of activities do you employ? (Please check all that apply)
- Lodging
  - Bird watching
  - Trails
  - Farming Tours, What type of crop (coffee, organic, etc)? \_\_\_\_\_
  - Canopy Tours
  - Waterfall Tours
  - Night Walks
  - Other, describe: \_\_\_\_\_
- d. Do you incorporate an educational component into your tourism activities?  
 Yes, please describe: \_\_\_\_\_  
 No
- e. Do you feel that ecotourism on your property contributes to conservation?  
 Yes, please describe: \_\_\_\_\_  
 No
- f. Do you consider the income from ecotourism to be supplemental to farming or primary?



- Supplemental Income
- Primary Income
- g. In the future, do you intend to convert any land used for farming/ pastures to conserved/ regeneration as a result of ecotourism success?
  - Yes
  - No
- h. Where did the idea of ecotourism originate?
  - Own observation
  - Neighbor/ Friend
  - Community or Social Organization
  - Other: \_\_\_\_\_
- i. Did you receive any training or education on the ecotourism industry?
  - Yes, please describe: \_\_\_\_\_
  - No
- j. Do you receive money from Pago Servicios Ambientales for any portion of your land?
  - Yes, please describe? \_\_\_\_\_
  - No
- k. Without ecotourism, would you continue to set aside forest for conservation/ regeneration?
  - Yes
  - No, what would you use it for? \_\_\_\_\_
- No, please answer a
- a. What is the main reason for not employing ecotourism?
  - Have sufficient land, but no interest/ do not need the income
  - Do not have sufficient land
  - Lack of financial support for starting
  - Lack of informational support on starting
  - Other, please specify: \_\_\_\_\_

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_