

The price we pay: Ecotourism's contribution to conservation in Monteverde, Costa Rica

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ABSTRACT

Recent increase in travel has made tourism one of the highest revenue producing industries worldwide (Inman Draft). Ecotourism has grown in Costa Rica, due to the 5% of global biodiversity and high percentage of protected habitat that the country possesses (Inman Draft). Ecotourism is defined as contributing to the local communities as well as conservation of the natural habitats it is based. I conducted numerous surveys were conducted in Monteverde, Costa Rica, which is an area with ecotourism companies, hotels and restaurants. It was found that the reserves, ecotourism companies and organizations are contributing about 9.68% of their annual revenue to conservation of the Cloud Forest. Tourists were also surveyed in order to determine their willingness to pay for a high quality nature-based experience. It was determined that 97.5% of tourists are willing to pay if they are guaranteed their money is going directly to conservation and environmental education. I suggest that a voluntary ecotax will allow more ecotourism revenue to find its way to ongoing conservation efforts.

RESUMEN

El aumento reciente del viaje ha hecho la renta de turismo uno de la más alta que produce de las industrias mundiales (Inman Draft). El ecoturismo ha crecido en Costa Rica, debido a la 5% de la biodiversidad global y el porcentaje alto del hábitat protegido que el país posee (Inman Draft). El ecoturismo esta definido como contribuyendo a la cultura local y conservación de los hábitates naturales que lo esta basado. Numerosas entrevistas llevaron a cabo en Monteverde, Costa Rica, que es un área con compañías de ecoturismo, los hoteles y los restaurantes. Fue encontrado que las reservas, las compañías del ecoturismo y organizaciones contribuyen acerca de 9,68% de su renta anual a la conservación del Bosque Nuboso. Los turistas se estuvieron entrevistados también para determinar su consentimiento a pagar por una experiencia naturaleza-basado de alta calidad. Fue determinado que 97,5% de turistas está dispuesto a pagar si ellos son garantizados su dinero esta contribuyido directamente a conservación y educación ambiental. Sugiero que un ecotax voluntario permitirá más renta del ecoturismo pagar para esfuerzos progresivos de conservación.

INTRODUCTION

Travel has increased with the rise of the global population and incomes. In 1990 it was estimated that \$230 billion US dollars were spent by roughly 425 million international travelers, making tourism the fastest-growing industry on earth, with an annual growth rate of 9% (Isaacs 2000). Ecotourism is a relatively new concept of travel to natural areas with goals to sustain the local culture and contribute to conservation (Lindberg 2001). Hiking, canoeing, photography, observing wildlife and other similar activities that do not involve the taking of wildlife are considered ecotourism. According to Isaacs (2000), in the United States, 3,120,000 people spent US\$222 million on observing,

photographing and feeding wildlife in 1991, and overall total expenditures by birdwatchers surpassed all over ecotourists. In 1981 the total expenditures of birdwatchers was estimated to be \$US20 million (Isaacs 2000).

Costa Rica has success in attracting ecotourists due its high biodiversity. This small country contains an estimated 5% of the world's species in the wide range of ecosystems (Inman Draft). In order to maintain high numbers of ecotourists, it is in the best interest of the industry to use their revenue for the conservation of these highly biodiverse and profitable areas. Conservation consists of sensible and careful use of natural resources including environmental education, land purchase, land protection and legal actions (Hunter 2002).

The development of ecotourism is an experience-based market that depends on high quality natural areas. It is the hope of conservationists that this market will provide funding for wildlife conservation as well (Isaacs 2000). Even though conservation is purportedly funded by ecotourism, this is not always the case. In Nepal's protected areas a mere 18% of the revenue generated by ecotourism was contributed to protection and management of the areas (Walpole et al. 2003). This study examines whether ecotourism is truly contributing to conserving the natural environments upon which it capitalizes on.

The purpose of this investigation was to determine whether revenue from ecotourism activities is being spent on conservation of the Cloud Forest in Monteverde, Costa Rica. Nadkarni and Wheelwright (2000) state that in 1992 about US\$5 million was generated by the area through ecotourism, yet only 13% was spent on the Monteverde Cloud Forest Reserve, the largest natural attraction for tourists in the area. I am also investigating the percentage of profits that ecotourism generates that is spent on conservation efforts such as environmental education, land purchase, land protection and legal actions. In order to ensure the future of the Cloud Forest, an increased amount of funding from ecotourism, the industry that utilizes it the most, is necessary.

METHODS

Study Site

Monteverde, Costa Rica is one of the largest areas of privately owned reserves in the world, which contains about 29,000 hectares of protected habitat (Cavanagh 2005; Weinberg et al. 2002). Within this protected area there are 100 species of mammals, 400 species of birds, 500 species of butterflies, 120 species of reptiles and amphibians, 2,500 species of plants, 500 species of trees and 1000s of insects can be seen (Nadkarni and Wheelwright 2000). The reserve is an ideal wildlife viewing area with its vast amount of biodiversity.

In 1980, Monteverde became a prime destination for ecotourists and during this time of growth hotels and restaurants multiplied a significant amount. By 1998 there were 15 hotels and more than 20 smaller inns. In total there were 450 rooms and over 1000 beds for tourists. Hotels and restaurants were followed by assorted gift shops, which sell multitudes of gifts, local crafts, books and postcards (Nadkarni and Wheelwright 2000).

After the Monteverde Cloud Forest Reserve established a limit to the number of visitors who could enter the reserve, there was further incentive for nature walks, tree

canopy tours, horseback riding stables and other small businesses to open. The goals of these businesses were to serve as an educational function, promote conservation and sustainable development in the area as well as produce profit. Travel literature soon featured Monteverde as a “must visit” (Nadkarni and Wheelwright 2000) when traveling to Costa Rica. This attracted higher numbers of tourists, who although had little knowledge of Monteverde, came with an awareness of the importance of rainforest conservation (Nadkarni and Wheelwright 2000).

This zone contains a patchwork of private reserves such as, the Monteverde Cloud Forest Reserve and the Santa Elena Cloud Forest Reserve, as well as industries with private forest including Sky Walk Sky Trek, the Ecological Farm, and SelvaTura. The area is also saturated with hotels, eco-lodges and restaurants, making it a suitable environment for my study.

Conducting Surveys

Information about revenue gained from nature based tourism by reserves, ecotourism companies and the Monteverde Conservation League was collected through interviews. These interviews were conducted with the management of each of the selected locations. The reserves and companies include the major reserves and attractions with forest landholdings: the Monteverde Cloud Forest Reserve, the Santa Elena Forest Reserve, Sky Walk Sky Trek, the Ecological Farm and SelvaTura. The survey used for interviews inquired about the number of tourists received per year, how revenue is used, if any contributions to conservation are made and the importance of ecotourism to Monteverde.

Concurrently, data collected through in-person interviews with 40 tourists from 6 different locations in the Monteverde Zone took place; the Hotel Belmar, El Establo Hotel, the Monteverde Cloud Forest Reserve, the Santa Elena Cloud Forest Reserve, SelvaTura and La Pension de Santa Elena. Different locations were chosen in order to ensure a broad spectrum of respondents; ranging from the luxury traveler to the backpacker on a budget. The data collected from the survey correlated to tourists’ stay in Monteverde in a financial manner. How much money is being spent by tourists on different aspects of their trip and their willingness to pay for nature-based activities is investigated.

Using the Contingent Choice Method to Determine Willingness to Pay

In order to accurately determine an individual’s willingness to pay, the contingent choice method was used. This method involves giving the participant two options of a hypothetical situation and different prices accompanying the options to determine preference (Walpole et al. 2003). For this survey the method allowed a determination of how much respondents would pay to enter a described reserve. Two hypothetical reserves were described in the survey. One reserve was represented as a well protected area, with education prior to entry on what trail to use and what may be seen in the reserve. The second reserve was described in the survey as being more disturbed and solely a reserve map would be received prior to entrance. The prices of the two reserves were then changed for each survey between US\$10 and US\$20, in order to determine

how much a tourist would be willing to pay. By using this indirect method a respondent is less inclined to lie about their preference and their willingness to pay could be determined (Biodiversity Advisory Committee 2005).

RESULTS

Ecotourism's Contribution to Conservation

According to the interviews that were conducted regarding the reserves, ecotourism companies and the Monteverde Conservation League, only 9.68% of the annual revenue generated does return to the Cloud Forest. Annually, about US\$5,620,982 is produced through ecotourism in Monteverde, yet only about US\$544,315.40 is invested back into the Cloud Forest (Table 1). The largest contributor to conservation is the Monteverde Cloud Forest Reserve making up about 68.2% of the money, followed by the Santa Elena Cloud Forest Reserve, 17.1%, and lastly the Monteverde Conservation League contributes 14.7% to conservation.

The Monteverde Conservation League, which attracts about 4,000 tourists annually (Figure 1), contributes all of its revenue from the Children's Eternal Rainforest back into some form of conservation. These forms of conservation include administration, legal action and protection, as they currently do not have the funds for educational programs or expansion. The Santa Elena Cloud Forest Reserve works in conjunction with the community and the money generated from its 18,000 visitors yearly is divided between the Santa Elena High School and maintenance of the reserve. According to the administration of the Ecological Farm (about 1,000 tourists annually), it does participate in some conservation such as donating money to the schools and reforestation projects. The Monteverde Cloud Forest Reserve contributes 60% of the revenue it receives to protection of the reserve, research of the forest, visitor's needs, administration and facilities. In 2004 this reserve received about 74,000 tourists (K. Masters pers. Comm.).

Conversely, Sky Walk Sky Trek, which receives 40,000 tourists a year, does not contribute to conservation efforts in Monteverde, nor does it contribute to environmental education. Also, SelvaTura receives the highest number of tourists per year, 78,000 visitors, and has the highest prices for entrance fees for all of the ecotourism activities surveyed, yet it does not actively participate in conservation.

Tourist Distribution

Tourists travel from all over the globe to experience the Cloud Forest of Monteverde. Of the 40 travelers surveyed, 39% of them were from the United States of America, 14% from Canada, 12% from Spain, 8% came from England and another 8% were from the Netherlands. Tourists from Germany composed 7% of the surveys while Sweden, South Africa, France and Scotland each composed 3% of the total distribution (Figure 2).

Of the 40 tourists, who vacation to the Monteverde Zone, 31% visited the Monteverde Cloud Forest Reserve, 16% participated in SelvaTura, 14% visited the Santa Elena Cloud Forest Reserve, 8% participated in Sky Walk Sky Trek and 1% visited the

Ecological Farm. 30% of the tourists who completed the survey visited other ecotourism companies such as the Night Walk, Coffee Tours, the Monteverde Cheese Factory, the Canopy Tour, Children's Eternal Rainforest and a variety of other attractions found in the area. Of the tourists that participated in the interviews, 32 visited more than one of ecotourism attractions on their vacation to Monteverde (Figure 3).

Where are tourists spending their money?

It is evident through the surveys that tourists have spent the most money for hotels, followed by ecotourism activities, and then meals. An average of US\$68 ± 118SD (n=40) is spent by travelers, who stay a mean of 2.74 ± 0.93SD (n=40) days, for hotels in the Monteverde area. US\$68 is the highest expense, followed by an average of US\$60 ± 67.1SD (n=40) spent on participating in ecotourism activities. Meals comprise roughly US\$42 ± 45.1SD (n=40), only about US\$20 ± 30.15SD (n=40) is spent on souvenirs and transportation in the Monteverde Zone averages to be US\$2 ± 6.3SD (n=40) (Figure 4).

Tourists Willingness to Pay for Conservation

After inquiring about tourist's willingness to pay for the hypothetical reserves presented, the results demonstrate that 87.5% of the tourists were willing to pay for a well protected forest. A reserve where the visitor is educated was preferred by 35 of the respondents, as opposed to a less protected, more disturbed forest, where little education takes place. The average price a tourist was willing to pay for an entrance fee was US\$15 ± \$3SD (n=40). Although 50% of the people would still pay for the less protected forest, 87.5% of the people were more willing to pay higher than the average price asked for the well protected forest (Figure 5). It was also found that 97.5% of the people surveyed would pay an additional ecotax of US\$1 if they were ensured that it would be contributed directly to conservation and environmental education.

DISCUSSION

Where has the money gone?

It is evident from the data collected that ecotourism does not contribute as much as it could to the conservation of the Cloud Forest in Monteverde, Costa Rica. About 9.68% of the annual revenue created from ecotourism is contributed to conservation efforts. This is a small percentage being used to protect the Cloud Forest, which is the major attraction for tourists. The money is used more to sustain the business than the resource upon which it relies. The majority of the money is being spent on hotels (~US\$68) and even though the tourists travel to Monteverde to see the Cloud Forest, yet the hotels contribution to conservation was not investigated in the study.

Ecotourism activities are a close second with an average of (~US\$60). The ecotourism companies that draw in the most visitors such as SelvaTura and Sky Walk Sky Trek do not contribute directly to conservation. In the case of SelvaTura, it is still paying for the land that comprises its park and is not interested in purchasing more land.

Much of the revenue generated returns into the business aspects of the park. The Monteverde Cloud Forest Reserve is one of the major tourist attractions in the Monteverde area and contributes 60% of its earnings to conservation, yet the other 40% was not accounted for during the survey. This leads to the speculation that ecotourism can not be relied on as a flawless source of revenue to protect natural areas (Isaacs 2000).

Tourists are Willing to Contribute

As said by Walpole et al. (2003) economic estimation techniques have that the value visitors place on protected natural areas is usually a great deal higher than prices charged. Tourists are willing to pay more for an experience in the Cloud Forest than they presently are; especially if they know their money is directly effecting conservation and/or environmental education. Data showed that 87.5% of tourists surveyed were willing to pay higher entrance fees of up to \$US20 for a well protected forest.

A Proposition for the Future

Based on the data collected through the surveys, tourists are willing to pay for both conservation and nature-based education. An overwhelming percentage of tourists (97.5%) would readily pay US\$1, if they were guaranteed that it would be contributed to conservation efforts. This leads to the idea of a voluntary ecotax of a flat rate in Monteverde. An ecotax is an additional fee added to a total price to pay for negative impacts caused by humans on the environment and influences ecological decisions of individuals (Backhaus 1998). The revenue created from this environmental tax could provide money directly to conservation and environmental education. Due to the large number of visitors in the Monteverde area, an ecotax could contribute a great deal to conservation of the Cloud Forest.

The proposed ecotax could be a voluntary addition to the total price of hotel stays since a visitor would pay once for their stay in a hotel in Monteverde. A traveler would be more likely to contribute an ecotax once, in addition to their hotel fee as opposed for every meal they have in the area or for every entrance fee. Tourists could be notified of this option by providing them with various channels of information at the hotel reception regarding participation in the ecotax. 25% of the tourists interviewed were traveling with a packaged tour; therefore package tours could be given the option of participating in the ecotax as well. According to Inman (Draft), nature tourists are willing to spend more money than other tourists. With their willingness to pay to support the feasibility of this proposition, a great deal of money could be contributed.

Even if only half of the visitors who traveled to Monteverde participated in the ecotax over US\$100,000 could be generated to conserve the Cloud Forest. Profits from a voluntary ecotax would be most beneficial by funding the Children's Eternal Rainforest. The data collected from the surveys suggest that the Monteverde Conservation League used the most of its revenue for conservation purposes, with approximately 100% of it going back into the forest. The addition of the ecotax earnings could help revive educational programs for the Children's Eternal Rainforest and allow the Monteverde Conservation League to purchase more land on the Pacific slope, which is in need of protection. Although this program would rely heavily on the participation of the hotels in

Monteverde, an ecotax is a realistic solution. Tourists want to help conserve, they just need a conduit as to how.

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LITERATURE CITED

- Biological Diversity Advisory Committee. 2005. Making Economic Valuation Work for Biodiversity Conservation. Department of Environment and Heritage. Australia. <<http://www.deh.gov.au/biodiversity/publications/economic-valuation/choice.html>>
- Backhaus, Dr. Jürgen G. 1998. The Law and Economics of Environmental Taxation: When Should the Ecotax Kick In? University of Maastricht. Netherlands. pp. 2-3
- Cavanagh, Erin. 2005. Monteverde, Costa Rica: Balancing Environment and Development. Monteverde Institute. pp.1-18
- Hunter, Malcolm L. 2002. Fundamentals of conservation biology.
- Inman, Dr. Crist. Draft. Impacts on developing countries of changing production and consumption patterns in developed countries: A case of ecotourism in Costa Rica. In: United Nations Environment Programme. pp. 1-56
- Isaacs, Jack Coburn. 2000. The limited potential of ecotourism to contribute to wildlife conservation. Wildlife Society Bulletin. **28**:61-69
- Lindberg, Kreg. 2001. Tourist "Consumption" of Biodiversity: Market Characteristics and Effects on Conservation and Local Development. In: World Bank/OECD Workshop on Market Creation for Biodiversity Products and Services. 2001 January. Paris, France. pp. 1-32
- Nadkarni, Nalini and Wheelwright, Nathaniel. 2000. Monteverde: Ecology and Conservation of a Tropical Cloud Forest. Oxford University Press, New York, page 351-388
- Walpole, Matthew J. et al. 2001. Pricing Policy for Tourism in Protected Areas: Lessons from Komodo National Park, Indonesia. Conservation Biology. **15**:218-227
- Weinberg, A., S. Bellows and D. Ekster. 2002. Sustaining Ecotourism: Insights and Implications from Two Successful Case Studies. Society and Natural Resources. **15**:371-380.

TABLES

Table 1 Average annual contribution to conservation through ecotourism activities in Monteverde, Costa Rica. The average entrance fee was used for each ecotourism activity. If it was there was not contribution or it was unclear as to the percentage contributed to conservation 0% was used.

Ecotourism companies/ Reserves/Organizations	Average entrance fee paid (US\$)	Annual number of visitors	Average annual revenue generated (US\$)	Contribution to conservation (%)	Average annual contribution to conservation (US\$)
SelvaTura	\$50.10 ± 29.1 SD (n=22)	78,000	\$3,907,800	0%	\$0
Sky Walk Sky Trek	\$20.50 ± 15.5 SD (n=6)	40,000	\$820,000	0%	\$0
Santa Elena Cloud Forest Reserve	\$10.33 ± 4.5 SD (n=3)	18,000	\$185,940	50%	\$92,970
Ecological Farm	\$8.33 ± 4.16 SD (n=3)	1,000	\$8333	0%	\$0
Monteverde Cloud Forest Reserve	\$8.36 ± 5.4 SD (n=11)	74,000	\$618,909	60%	\$371,345.40
Monteverde Conservation League (BEN)	\$20 ± 11.5 SD (n=17)	4,000	\$80,000	100%	\$80,000
Total		215,000	\$5,620,982		\$544,315.40

FIGURES

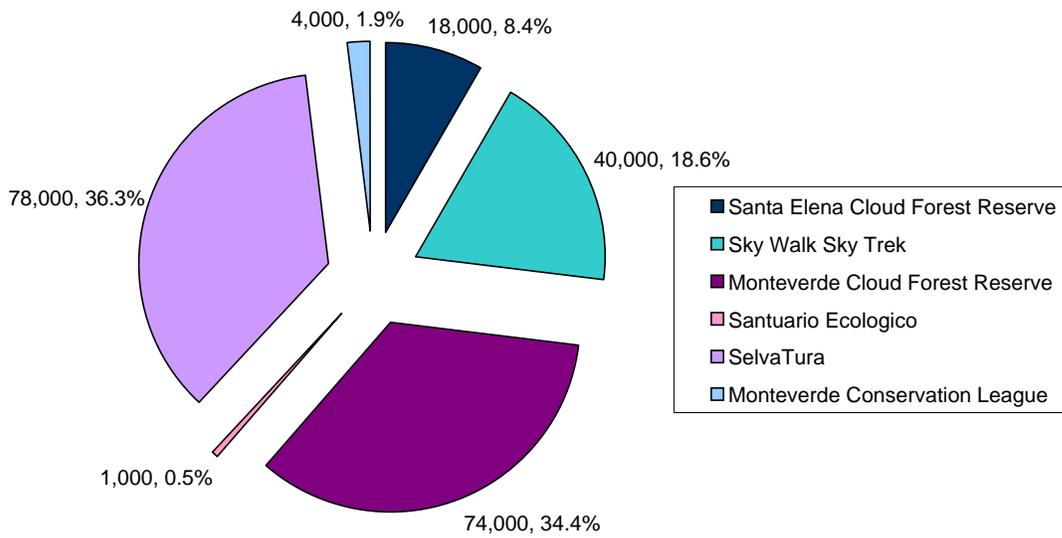


Figure 1 The yearly distribution of the number of tourists who visit the reserves, ecotourism activities and the Monteverde Conservation League. The Monteverde Cloud Forest Reserve (34.4%) is a major attraction, along with SelvaTura (36.3%) and Sky Walk Sky Trek (18.6%).

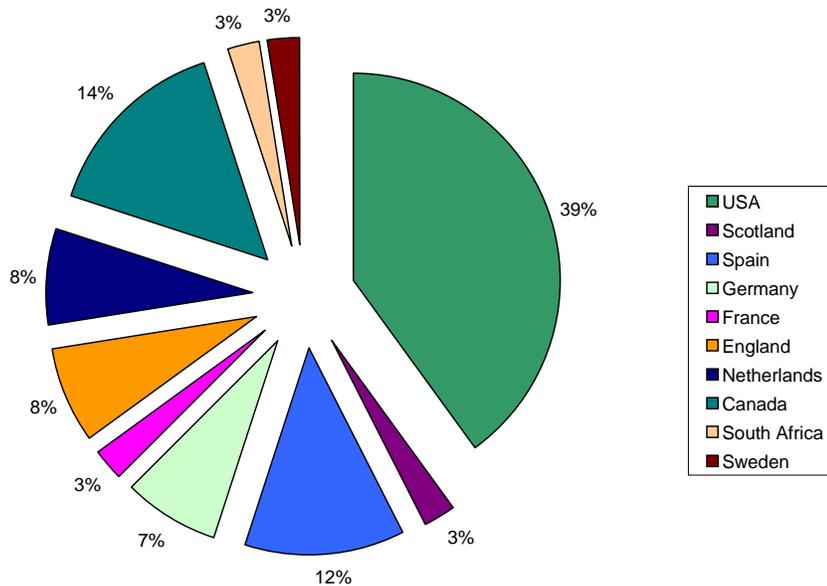


Figure 2 Global distribution of tourists visiting Monteverde, Costa Rica between 10/26/2006 and 11/14/2006. Tourists travel from developed countries with high incomes allowing them to afford international travel and a nature-based experience.

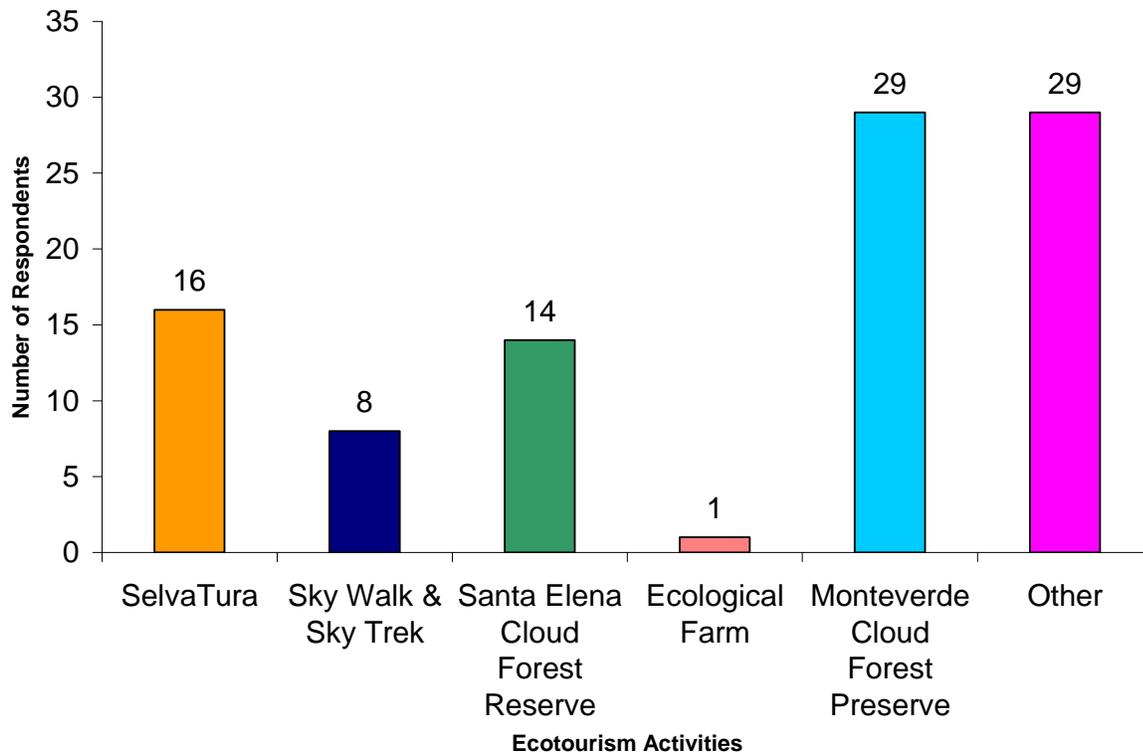


Figure 3 Number of visitors who participate in ecotourism activities and reserves that are visited in Monteverde, Costa Rica between 10/26/2006 and 11/14/2006. Note that 29 of the 40 travelers surveyed visit the Monteverde Cloud Forest Reserve, which contributes on 60% of its revenue to maintenance of the facilities and protected areas. SelvaTura, an ecotourism attraction that does not contribute to conservation, attracted 16 of the tourists interviewed during this time period.

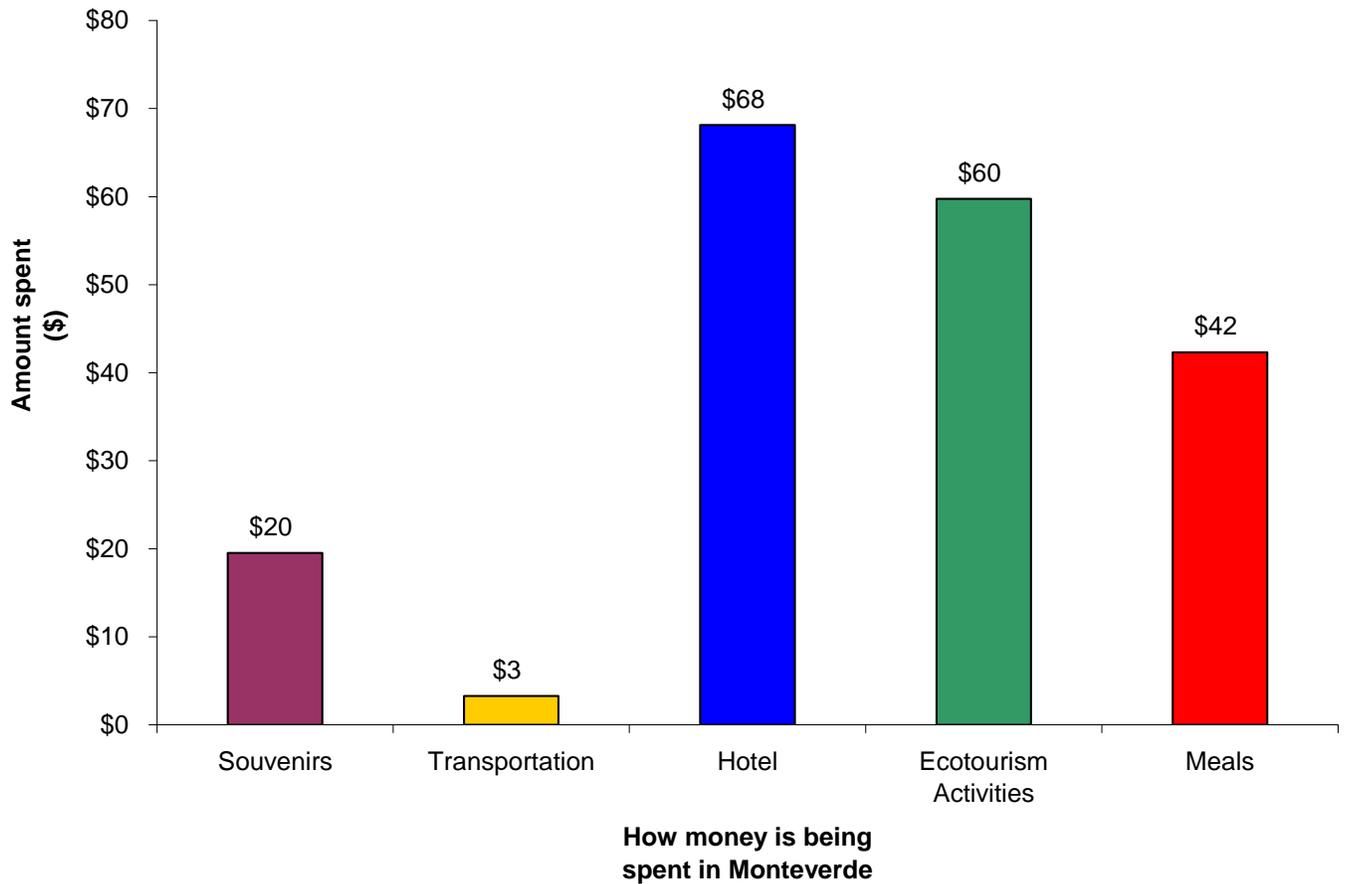


Figure 4 Average amount of money spent by tourists in Monteverde, Costa Rica between 10/26/2006 and 11/14/2006. Tourists spend an average of US\$68 ± 118 (n=40) on hotel stays, US\$60 ± 67.1 (n=40) on ecotourism activities and average of US\$42 ± 45.1 (n=40) is spent on meals.

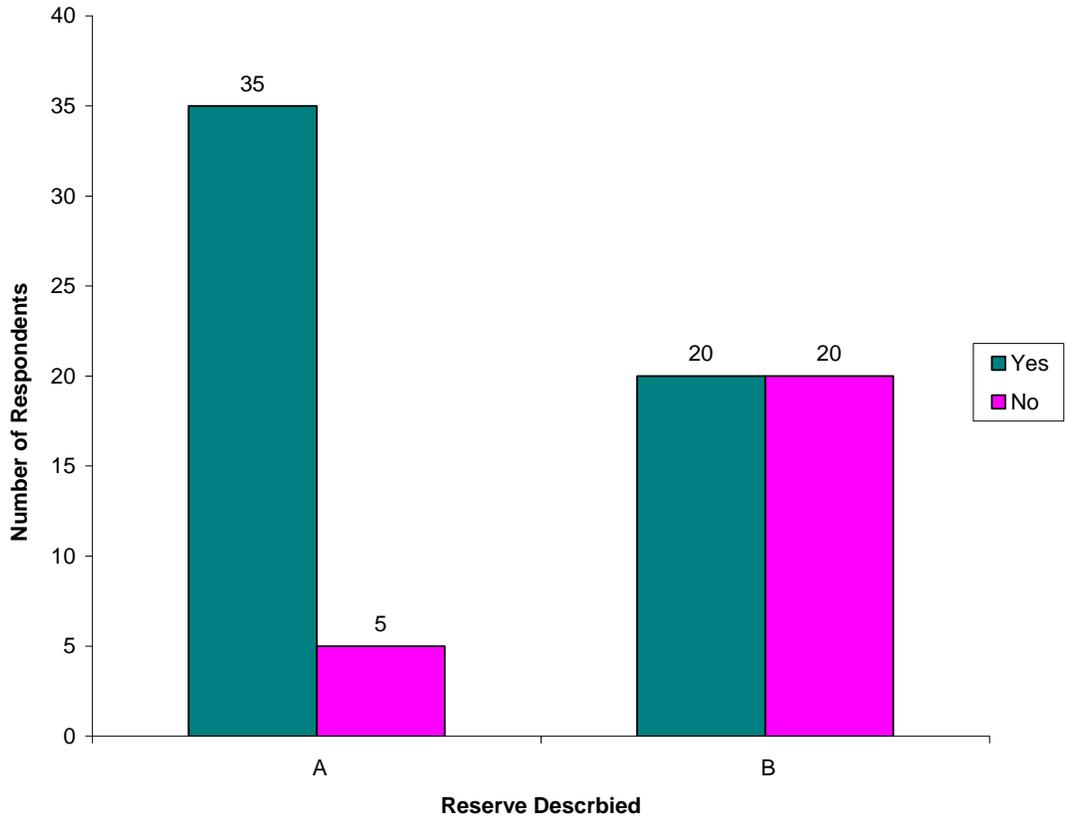


Figure 5 The number of respondents who were willing to pay a given entrance fee for the hypothetical reserve described in the tourist survey. The entrance fees varied between US\$10 and US\$20. More respondents are willing to pay the higher cost for the well protected, diverse Reserve A, where they are educated as to where to go and what trails to use. Although Reserve B was more disturbed and only included a map, 50% of tourists were still willing to pay the entrance fee.

APPENDIX B

Questionnaire #: _____

Tourist Survey

Purpose: To collect data from tourists in order to determine how much of the revenue from ecotourism is being spent on conservation efforts in Monteverde, Costa Rica.

Date: _____ Location: _____

1. What country are you from? _____
2. How many people are you traveling with? _____
3. What is the reason for your stay here in Monteverde (i.e. vacation, education, research, etc.)? _____
4. How long is your stay? _____
5. Approximately how much have you spent on the following(in the Monteverde area):
 - a. Souvenirs? \$_____
 - b. Transportation? \$_____
 - c. Hotels? \$_____
 - d. Eco-Tours and Entrance fees? \$_____
 - e. Meals? \$_____
6. What Eco-tours or activities have you participated in here in Monteverde?
 - a. SelvaTura ____
 - b. Sky Walk and Sky Trek ____
 - c. Santa Elena Cloud Forest Reserve ____
 - d. Ecological Farm ____
 - e. Monteverde Cloud Forest Reserve ____
 - f. Other _____

7. Are you here on your own or with a packaged tour? _____
8. Of the two options, which would you be most likely to choose?

Forest A: A well protected old growth and partially regenerated forest, with a dense canopy, numerous species of birds, monkeys, lizards as well as other small vertebrates and invertebrates. Prior to entering the forest you are educated as to what you may see, which of the dirt trails to use and general “forest etiquette”. For this experience you will have to pay an entrance fee of \$_____.

YES

NO

Forest B: A mixture of old growth forest and regenerated forest, with a dense canopy at times, many birds of the same species, some monkeys, and a few other small vertebrates and invertebrates. After paying your entrance fee of \$____, you enter the wide, paved trails with a map of the reserve.

YES

NO

9. Would you be willing to pay an additional \$1 contribution (ecotax) for conservation or environmental education?

Ecotourism Survey

Purpose: To collect data from ecotourism companies and organizations in order to determine how much of the revenue from ecotourism is being spent on conservation efforts in Monteverde, Costa Rica.

Date: _____

Company/Organization Name: _____

1. How would you define Ecotourism?

2. On average how many tourists are received per year? _____

3. How much do you charge for your services? _____

4. Is any portion contributed to conservation efforts (education, preservation, protection, legal action)?

Yes

No

5. Do you receive money from other sources?

a. Donated? _____

b. Grants? _____

c. Other: _____

6. How is your revenue divided in order to sustain your business?

7. If the number of tourists visiting per year were to almost double would you contribute more of your profit towards environmental education?

YES NO

8. If the number of tourists visiting per year were to almost double would you contribute more of your profit towards expanding your reserve/conservation of forest?

YES NO

9. How important is ecotourism to the economy of Monteverde?
