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## **The importance of education in ecotourism ventures: lessons from Rara Avis ecolodge, Costa Rica**

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**Abstract:** Ecotourism is based on three main concepts: conservation and protection of the environment, supporting local cultures and economies and environmental education for both locals and tourists. Thus far much of the research has focused on the first two components; largely ignoring the importance that environmental education has in the future of ecotourism and the conservation movement as a whole. Therefore, this paper will focus on what research has been conducted so far on environmental education. Furthermore, it will describe a study done in the first ecolodge in Central America, Rara Avis, on the effect education can have on knowledge gained and an improved conservation ethic. As a result, this paper will show why the future of ecotourism needs to include a stronger focus on building quality environmental education to increase conservation ethic and pro-environmental attitudes.

**Keywords:** ecotourism; sustainable tourism; sustainable development; environmental education; conservation; Costa Rica.

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### **1 Introduction**

Tourism is an ever growing industry around the world with many countries now dependent on the tourism industry within their country to continue to grow and develop. As a report put out by the World Economic Forum states, there was an increase in the number of international tourism receipts from US\$2.1 billion to US\$622.7 billion between 1950 and 2004. By 2006, the tourism sector accounted for 10.3% of world GDP. Furthermore, in 2006 there were 234 million jobs in the industry, making up 8.2% of total employment worldwide (World Tourism Analysis, 2007). The World Tourism

Organization (UNWTO) has estimated that the industry has grown from 25 million international travellers in 1950 to over 800 million today. They expect that number to jump to 1.2 billion travellers by 2020. The question now for the industry is how to minimise the impact of these travellers. Since the 1980s one solution has been offered: ecotourism. With its promises to not only preserve the environment but also offer opportunities that are unique both culturally but also within nature, it has become an avenue for much of the industry to look towards for the future of tourism.

This paper provides an overview of the history of the how the concept of ecotourism came to be. Section 2 presents the research conducted so far on the importance of education as a vital component of ecotourism. This section also presents findings on the impact of education on ecotourism and environmental awareness as well as the behaviour of individuals exposed to ecotourism. These findings are tested through a multimonth study conducted at Rara Avis ecolodge in central Costa Rica. Finally, the findings from Rara Avis are used to argue for the need for a greater focus on the importance of education in future ecotourism ventures. Although it is difficult to generalise across all of the ecotourism industry based on the results from one eco-lodge, I believe helps validate certain propositions presented in the literature below and calls others into question, while also propelling change for the industry and for future research.

## **2 The development and problems of ecotourism**

Since the Brundtland Report appeared in 1987, sustainable development has become a goal that practitioners of development strive to meet. The difficulty is preserving the environment of today for future generations while also allowing for economic development to occur. One solution, ecotourism, came about in late 1980s based on travelling and learning about other environments and cultures. During the experience the traveller would also help with that area's economic development and protection of the local environment through the money paid for those experiences. In recent years, ecotourism has come under fire, especially because of its lack of definition and guidelines about what opportunities are included as ecotourism and which are not. Furthermore, two issues have been identified by industry leaders: a lack of focus on national tourism and national pride, and also the concept of an ecotourist bubble.

### *2.1 Focus on international not national tourists*

Since there are so many tourists that are travelling internationally, most of the resources in attracting potential visitors go towards international tourism and not domestic tourism. As Honey writes in her book this is a problem because, "[there is] the need to build a [domestic] constituency that appreciates and wants to protect national parks, local culture, and fragile ecosystems" (Honey, 2008, p.104). In addition, there needs to be a creation of a pride attached to ecotourism domestically. Honey writes that, "Ecotourism has helped create the self-image of Costa Ricans. It's now their self-identity" (Honey, 2008, p.161). If this pride does not occur then resistance to ecotourism may begin to emerge, such as one example from Belize where "one resident vowed to let his garbage pile up all over the beach to show that local people and not foreign tourists should decide what the town looks like" (Fritsch and Johannsen, 2004, p.128).

Two simple acts have been taken in Costa Rica to encourage domestic tourism. The first is a reduced entry cost to all national parks and museums. Furthermore, most ecotourism ventures whether they are a hotel or an attraction, such as the hanging bridges near the Arenal Volcano have resident rates as well. Simple actions like these have seen a high number of Costa Ricans visiting and therefore supporting ecotourism ventures throughout the country. This example must be used more widely around the world so that local residents can afford to enjoy the attractions of their own country. A further argument would be that if local residents and foreigners interact especially during through environmental education, both can learn from each other. This will enrich both of their experiences and creating larger support for that ecotourism venture at the same time. The benefits of environmental education resulting in better connections between locals and foreign ecotourists will be discussed below.

## *2.2 Ecotourist bubble*

Carrier and Macleod have discussed a phenomenon that they believe occurs during most ecotourism ventures, the eco-tourist bubble. The basic idea is that the tourist is in a bubble where they only focus on the interaction between themselves and their immediate surroundings. Outside the bubble are all the influences the tourist is making through their environmental effects both domestically and internationally. Also, their cultural effect through the creation of unequal wealth in a society or displacement of locals for ecotourism projects becomes a significant factor (Carrier and Macleod, 2005). Like many authors, Carrier and Macleod trace this problem to a definition that is too fluid. Consequently, tourists do not fully realise the effect they are having on their surroundings because education of tourists is often left out of ecotourism practices. This bubble can easily be popped with the inclusion of more education within an ecotourism venture, as this paper argues. A fuller picture of the country must be provided including how culture, tourism, environment, etc. interact within a nation. This is especially important so that misperceptions do not form in people's minds. Instead, when they return home they can share stories not only about the amazing beaches they observed but also of the culture and biodiversity of a country, therefore supporting more ecotourism within the country they visited. The breaking of the ecotourist bubble will be seen in Section 2.3.

## *2.3 Definition/certification and moving forward*

The creation of the term ecotourism has been credited to the Mexican Consultant, Hector Ceballos-Lascuráin, in July of 1983. He stated that ecotourism "involves travelling to relatively undisturbed or uncontaminated natural areas with the specific object of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural aspects" (Weaver, 2005a, p.19). This initial interpretation has led many to put mass tourism and ecotourism on opposite ends of the tourism spectrum. The problem is that since 1988, while many people have presented definitions, no definition can be agreed upon. In addition, there have been many country focused attempts and, most recently, the United Nations' attempt to create a set of international ecotourism criteria along with other international non-governmental organisations. Such efforts have yet to receive wide dissemination or international acceptance. As a result the industry still lacks a unified way to define and therefore create an international certification process for ecotourism ventures.

Since each ecosystem is unique, specific activities may differ, but all ventures should include the following criteria. Firstly, there should be minimal impact upon both the natural environment and the local community. Secondly, control and economic benefits should mostly be held by the local population so that long-term environment, economic and cultural sustainability can occur, creating improvement in the local community. Thirdly, a learning atmosphere must be created that facilitates learning not only while the ecotourist is on location but also before and after their experience.

This is especially important because ecotourism provides a way for developing insight about other parts of the world. It presents both the beauty but also the struggles those areas are facing and allows these insights to be spread quickly through word of mouth. Therefore, in the current state of ecotourism a large amount of direct conservation is occurring because ecotourists see and hear about the destruction of the environment while visiting an ecolodge and therefore give directly. If this direct conservation can be connected with a stronger learning environment then more indirect conservation can occur by the ecotourist when they return home. This indirect conservation is seen when they donate to conservation organisations, write their representatives, or get people they are in contact with involved with conservation. Such actions generate a loop of direct-indirect-direct conservation that can be ongoing. Therefore, this important connection between ecotourism and education within ecotourism operations will be discussed further in Section 3.

### 3 Education and ecotourism

#### 3.1 Importance of education within ecotourism

Ceballos-Lascurian, a founder of the term ecotourism, states,

“The main point is that the person that practices ecotourism has the opportunity of immersing him or herself in nature in a way that most people cannot enjoy in their routine, urban existences. This person will eventually acquire a consciousness and knowledge of the natural environment, together with its cultural aspects, that will convert [them] into somebody keenly involved in conservation issues.” (Ceballos-Lascurian, 1988, p.13)

Furthermore, “one often overlooked way in which ecotourism supports conservation is that ecotourists, upon returning home, act as advocates for the area visited” (Batta, 2006, p.58). Many authors including Ceballos-Lascurain (1996) have advocated that education is a necessary and important part of ecotourism ventures (Blamey, 1997; Buckley, 1994; Stem et al., 2003; Weaver, 2005b, 2008). In one of the initial definitions for ecotourism, Ceballos-Lascurain states about ecotourism that it should have the “specific objective of *study*, admiring, and enjoying the scenery and its wild plants and animals as well as any existing cultural manifestations found in these areas” (Ceballos-Lascurian, 1988, p.14). In addition Martha Honey, one of the premiere researchers on ecotourism, emphasises the importance of education in her work by including it as the third component of ecotourism out of the seven characteristics she identifies (Honey, 2008, p.30). The importance of education in an ecotourism ventures will be demonstrated both in this section and in Section 3.2 by looking at research done at Rara Avis Ecolodge in central Costa Rica.

So far this educational component of ecotourism has been missing from much of the research on ecotourism. The question some authors have posed is: Does ecotourism

increase the knowledge of the ecotourist on the biodiversity and conservation of an area? In addition, after the ecotourist has concluded his or her stay at an ecotourism venture, are they more likely to try to conserve the environment more in their day to day lives and also through financial assistance to conservation organisations?

### *3.2 Informal education in ecotourism*

One major study on how informal education and ecotourism can work together was conducted by Narelle Beaumont in Lamington National Park in southeast Queensland, Australia. Before writing about her study, Beaumont explains the reasoning for why ecotourism could be a vehicle for environmental education. "The experiential form of environmental education provided by ecotourism is deemed more efficient in altering attitudes than classroom learning methods" (Beaumont, 2001, p.320). Beaumont goes on, "enjoyable experiences in the natural environment associated with learning about natural processes are said to be the stimulus for developing a rapport with nature and a desire to protect and care for it" (Beaumont, 2001, p.320). Beyond this initial bond, outdoor experiences done through ecotourism can often break the ecotourist's bubble by showcasing the degradation that human populations are responsible for, but also the change that conservation efforts can have on damaged land.

Her study focused on four groups of tourists: commercial coach day tours, commercial guests, independent day visitors and campers. Her research focus was to see if ecotourism contributes to conservation – by promoting pro-environmental attitudes and responsible environmental behaviour – as a result of a better understanding of the environment following an ecotourism experience. Furthermore, she was testing the hypothesis that a ceiling effect occurs with ecotourists. She explains this idea of a ceiling effect in her essay when she writes, "there has been a long held view that ecotourists already have pro-environment attitudes. Therefore, attitudes would not alter after involvement in an ecotourism activity due to a 'ceiling effect'" (Beaumont, 2001, p.318). Beaumont believes that her results fall in line with previous studies that have found that the biggest determinant of gains in knowledge is previous knowledge of the environment (Beaumont, 2001, p.335). "These findings have important implications, as they demonstrate ecotourism's potential to influence the views of the people who are not particularly pro-environment by a short ecotourism experience with limited environmental education" (Beaumont, 2001, p.336). She concludes that even if ecotourists are already environmentally aware, an ecotourism experience can act as a way to reinforce the importance of supporting conservation. Furthermore, without ecotourism a conservation ethic in non-traditional ecotourists may never occur.

One article in support of Beaumont's idea of a ceiling effect was written by Jennifer Hill. Hill also used a survey approach on tourists who visited a rainforest protected area that had a built in 1.75 km rope walk. In her survey she asked about tourist satisfaction, desire for more information, and attitudes towards conservation as well as a short quiz about the rainforest the tourists were in. Two sets of tourists were interviewed: those who had access to information sheets along the rope walk; and also a set of tourists who were not given the information sheets. Hill found three interesting statistics during her study. The first was the difference in the responses to the question 'would you have liked more information during your visit'. Of the group without information sheets 76% responded that they wanted more information, while only 27% of the tourists with information sheets said they wanted more information. This shows that some ecotourists do in fact

want to gain knowledge during their ecotourism experience. The second finding Hill discovered was the difference between the quiz scores of the two groups. The group without information only got a score of 43% on the quiz while those with information got nearly 70% of the quiz questions correct. This finding makes sense but also means that at least in the short term some ecotourists do gain knowledge about the environment around them. Lastly, Hill found that on average about 75% of ecotourists with and without information said that neither their attitudes towards conservation nor their environmental behaviour would change. As the author writes, “this was largely because visitors felt that they were already conservation-oriented or that they already behaved as environmentally responsible tourists” (Hill et al., 2007, p.82). Hill’s work confirms Beaumont’s idea that ecotourists are often already environmentally conscious and there is a ceiling effect. She also demonstrates that knowledge, at least in the short term, can be gained and for the most part ecotourists want some form of environmental education during the experience.

### *3.3 Formal education and ecotourism*

There are many programmes in ecotourism that are much more education-focused, especially those run through schools. One example of this kind of education oriented programme is presented by Abigail Rome, in Belize. The author focuses on the School of Field Studies’ (SFS) four week programme in North-western part of Belize. The purpose of the programme was not only to educate the 15 SFS students but also to leave an education programme that could be adapted for future ecotourists. As part of the programme SFS helped to design texts for three self-guided hiking trails, blueprints for signage of the trails, local educational resources for 4-6th graders, and a new informative brochure for the nature reserve (Rome and Romero, 1998, p.36). The added benefit for all future ecotourists was large and was the biggest impact of the SFS programme, because the resources left behind could be used for adults, teens and children, allowing for all levels of ecotourists to have a fuller educational experience. Furthermore, the SFS programme promotes interaction between the SFS students and local students allowing for learning to occur between both groups. This example supports the idea that more ecotourism ventures should work to attract school programmes and field researchers, because they will most likely be able to help improve the education quality of the venture as well as having a positive cultural exchange benefit.

Another example of formal education and ecotourism working together is the partnership between University of Maryland and the Kayapó indigenous group in Brazil. The focus was to keep Kayapó people as the guides and the teachers for the students instead of bringing in outsiders who were unconnected to the local culture. Therefore, students were given the opportunity not only to learn about the biology of the area but also the importance of the local culture, especially concerning environmental management. An interesting dynamic to this project is that there was an emphasis not only on the students learning from the Kayapó but also the local population learning from the students in an informal setting. This setup has proven to be an effective strategy for ecotourism with four key benefits summarised by the authors,

“(1) revenues; (2) the opportunity to control the presentation of knowledge about themselves and their territories; (3) a communicative experience in which to build competence in a new language and ideology that serves their interests in the global conversation; (4) furthers an already expansive network of international support.” (Zanotti and Chernela, 2008, p.515)

One additional benefit of the programme is that it can create powerful motivations for life-long interests in topics such as conservation of the environment and protection of local cultures. As with the SFS programme the University of Maryland also saw direct benefits in an improved ecotourism venture, the creation of more local support and cross-cultural exchange.

### *3.4 Improving education in ecotourism*

In a different approach to why education is important in ecotourism, Duenkel and Scott write about the potential to alter tourists' outlook on reality.

“A wilderness travel excursion is a novel experience in which new views and understandings of the natural world may be presented. These new meanings could, therefore, lead to the construction of an alternate reality—a wilderness reality.” (Duenkel and Scott, 1994, p.42)

The authors believe that if the educator in the ecotourism venture does their job properly the urban reality that tourists carry with them can be challenged and sometimes replaced with a reality that is more environmentally inclusive.

Duenkel and Scott provide a few examples of how to do this, suggesting, firstly, the importance of ‘educating participants about necessary techniques to minimise degradation of natural areas’ and, secondly, the need for ‘dispelling the myth of dualism and encouraging the feeling that humans are a part of, and not apart from, the natural world’ (Duenkel and Scott, 1994, p.42). The authors’ basic idea is that tourists should be educated to the fact that they are part of a larger process beyond the human species and must think about how their actions affect the welfare of other beings, especially plants and animals. This argument is a much more philosophical way of trying to make more conservation minded tourists through ecotourism.

James Kimmel offers a different viewpoint on the subject of education and ecotourism, because he is writing from the tour guide’s perspective and how he personally encourages learning in his tours. In contrast to what most people would assume, he believes direct education of ecotourists is not the way to go. His approach was to use meal times when everyone is together and less distracted as a time for informal education. During the breakfast period, he previewed the day to the ecotourists so they knew what to keep their eye out for, and also posed questions that he hoped the tourists could answer by lunch time. Lunch and dinner were used to review the important items seen during the day and to create discussion about the questions posed in the morning and the larger picture beyond specific animals or plants that were seen. His goal was not to name every animal and plant, because he did not know all of them – he would encourage tourists to use field guides if they wanted to know exactly what things were. Instead his focus was on the bigger picture and posing questions that would demonstrate how adaptation and other natural processes related to humans so that tourists could easily see the connection and similarities between animals, plants and humans. As he writes,

“the discussions that resulted from those questions helped the participants discover much about the region. Setting a context for discovery allowed the participants to become actively involved in their own learning process. That is perhaps ecotourism’s greatest potential for providing effective environmental learning.” (Kimmel, 1999, p.43)

This is another example of how education can become more effective in ecotourism, because forcing someone to learn for themselves is often the best way for retention of information to occur.

Regardless whether the education is in a formal or informal setting recent literature in the environmental education field has spoken to the fact that out of the classroom experiences are necessary. Louise Chawla conducted a study in 1999 on how to create effective environmental action. Her study found that environmental action could be attributed to a set of sources. These sources are: extended time spent outdoors in natural areas; parents or other family members; teachers or classes; involvement in environmental organisations; books and the loss or degradation of a place (Chawla, 1999, p.15). Out of these sources, she finds that the top reason for environmental action during the life of her respondents is experience in natural areas. Chawla asserts that “these consistent results suggest that—important as school instruction may be—environmental educators also need to seek ways to foster the type of out of school experiences that figure so saliently in environmentally committed people’s memories” (Chawla, 1999, p.25). As seen above, this has been occurring more and more often, especially with university programmes. In addition, ecotourism operations offer a great opportunity for these out of the classroom environmental education opportunities.

An article written in *Biological Conservation* in 2008 reinforces the importance of conservation biology and ecotourism working together. The article describes the positive impact that biologists can have on an ecotourism operation. In this case because the biologists are researching and therefore protecting the macaws which results in: more ecotourists visiting, ecotourists learning from the biologists and the guides gaining knowledge from the researchers as well (Brightsmith et al., 2008, p.2840). Therefore, ecotourism ventures need to offer a unique location for research for biologists to want to come to so that they come more regularly so these benefits can flow from biologists to guides to guests. As the article points out,

“Conservation researchers face a perennial shortage of funds, especially in the developing world where biodiversity is concentrated and local resources are scarcest. Fortunately there are hundreds of ecotourism lodges and many volunteer organizations recruiting for projects in the developing world. Researchers can help these lodges fulfill the requirements of true ecotourism and distinguish themselves in the market.” (Brightsmith et al., 2008, p.2840)

This system of biologists getting an area to research and protect species while also offering benefits to the ecotourism venture at the same time should be looked at closely for an option for many ventures to improve their education component in the future.

The research above demonstrates that ecotourism can be used as a vehicle for both formal and informal environmental education to occur. The end goal of these studies is to incorporate the environment into the lives of those that take part in the ecotourism venture. Such incorporation encourages a loop of direct-indirect-direct conservation as an ecotourism venture increasing the educational component of their operation, benefiting the conservation movement as a whole.

One area of contention is how to best incorporate education into ecotourism ventures. Some authors believe that directly educating ecotourists with information sheets or a guide using classroom type education techniques is best. Others believe that freedom of exploration results in more retention, with the guide providing enough information to ecotourists to get them interested but allowing them to find the information themselves or inquire more about the topic. This also is seen through student exchange programmes

where choices are given and freedom of exploration is encouraged so students are more invested in their project and their surroundings.

Another contention in the literature is the idea of a ceiling effect. It seems that less change does occur with those who have a conservation ethic before a trip versus those ecotourists who are not environmentally minded. In the end, authors agree that getting everyone to a high level of conservation ethic is important and reinforcing that conservation ethic only helps with those who may be affected by the ceiling effect.

All of the ideas presented in this section are evident in the case study presented in Section 4.

#### **4 Education and ecotourism in the Costa Rican context: Rara Avis ecolodge**

Costa Rica has been identified as one of the key areas where ecotourism has taken hold and been successful (Honey, 2008; Kruger, 2005). One of the key establishments within the country that has been identified by the industry as a prime example of good ecotourism practices is Rara Avis (Honey, 2008, p.198). The venture is located near the centre of the country on the border of the Braulio Carrillo National Park and La Selva. Rara Avis was founded by a US ecologist, Amos Bien, who discovered the site for the venture during his work with La Selva from 1979 to 1983. In 1983, Amos decided he wanted to do more than research the land in the area and so he dedicated his time and money to the new idea of ecotourism. He purchased the land Rara Avis is on in order to test his theory that Costa Ricans could make more per acre from the land doing ecotourism than the \$7 per acre they could make by deforesting and using the land for pasture. By 1986, students were brought to the area to conduct research on the forests surrounding the main lodge that was being constructed. In 1989, Rara Avis officially opened its Waterfall Lodge and ecotourists began to join the researchers in exploring the rainforests of Rara Avis's private reserve.

Rara Avis is considered the first eco-lodge in Latin America, and most likely the world, having started the movement of both eco-lodges and ecotourism in the region. Over the last 20 years Rara Avis has been responsible for the beginnings of many projects that can be seen around Costa Rica. Orchid houses, one of the first projects implemented after the lodge was established as a way for the venture to make some money, can now be seen around the country. Butterfly houses, now seen around the country as a primary attraction in most Costa Rica tourism locations, got their start at Rara Avis as well. The first aerial tram was established at Rara Avis by Donald Perry – he later moved on to his two locations at Jaco Beach in southern Costa Rica and along the Braulio Carrillo highway in central Costa Rica.

The private reserve that surrounds the Rara Avis lodge protects nearly 1,500 ha of land directly, but because of the decree made by President Monge in 1986, the borders of Braulio Carrillo National Park were extended to meet Rara Avis's borders, connecting it to 45,000 ha of protected forest of the national park. As a result, Rara Avis is both an area for ecotourists but also for scientific researchers and schools to visit as well.

This unusual mixture of students, ecotourists and researchers often creates a learning atmosphere for everyone. Guides can learn from students and eco-tourists as well as researchers to enhance their knowledge. The guides can then share the knowledge they gain from the constant flow of visitors to Rara Avis to future tourists, creating an ongoing

cycle of knowledge. The venture offers a unique opportunity for locals and foreigners to either work or volunteer at the lodge, often as guides. As a result, locals receive a great education on biology, which make them even better guides at Rara Avis and often allows them to move on to other ecotourism ventures around the country since they are now a more valuable asset. In addition, since Rara Avis accepts foreigners as volunteers year round, it provides these people not only firsthand training in biology but also cultural training they can share on return to their home country.

#### *4.1 Methods*

The study was conducted during my three months as a volunteer at Rara Avis between May and August 2009. The majority of the study involved survey work. Throughout my stay in Rara Avis, visitors were given pre-trip and post-trip surveys. A total of 108 pre-surveys and 176 post-surveys were taken. The pre-visit survey included five sections. Sections 1 and 2 asked the ecotourist about their reasons for visiting Rara Avis and to describe their main reason as well as their expectations for their visit. Section 3 was used to see what level of conservation ethic the ecotourist has already through a rating system based on different statements concerning the environment. This section is followed by one that ascertained how committed tourists are to their conservation ethic. Section 5 asks four questions to get a preliminary sense of the ecotourists' environmental knowledge. The post-visit survey mirrored much of the pre-visit survey in order to assess the change that may have occurred during tourists' time at Rara Avis.

My guiding approach tried to mirror as much of the literature that I discussed above as possible when incorporating education into my guided hikes. We would always start all ecotourists out on our introductory hike where I would encourage them to keep track of the five or six types of palms they would see during the hike. This often worked as a good way for some ecotourists to even guess the next plant as a palm before I described it; during the rest of their stay many would often correctly identify the palms on other hikes. In addition, I would rarely identify plants and animals not by scientific names but instead by common names so that the tourist would be more likely to retain the information. Also, when certain plants were identified I would also inform the ecotourist of the vital connections and importance it has to other plants and animals or what uses humans have used the species for.

## **5 Results/discussion**

### *5.1 Motivation*

Respondents had ten choices for what motivated them to visit Rara Avis, and had to rate each reason unimportant, somewhat important, important or very important. Exploring a new place received 73% of responses as a very important reason they visited. Seeing a beautiful landscape was the second highest choice with 69%, while both experiencing wilderness and seeing wildlife received 62%. When asked which factor was the most important reason for their visit, exploring a new place was most frequently cited by respondents.

### *5.2 Environmental interest/conservation ethic*

A series of 16 questions related to the environment and conservation was asked to gauge the conservation ethic of the ecotourist on the pre and post surveys. Four key statements were identified from the surveys. Firstly, 'if wood is needed from a forest then it should be logged out'. On both the pre and post survey about 75% of respondents said they disagree or strongly disagree with this statement. Secondly, 'I think it is ok to hike off a trail'. In the pre-survey 62% and the post-survey 74% disagreed or strongly disagreed with this statement. Thirdly, 'I think the environment is important but only if conserving it doesn't hurt the economy'. Again the pre- and post-surveys had a similar response rate of 77% either disagreeing or strongly disagreeing. Finally, 'I care if the lodge I am staying at protects the environment around it'. Both the pre- and post-surveys had a response of over 92% agreeing or strongly agreeing. In addition, on the post-survey tourists were asked if they would be willing to donate \$15–20 to help conserve the forest around Rara Avis. Over 65% of respondents said they would agree or strongly agree.

### *5.3 Environmental commitment/involvement*

A collection of seven questions related to commitment and involvement with environmental protection were asked on both the pre- and post-surveys to see if any change occurred because of the Rara Avis experience. Firstly, respondents were asked how often would they donate to a conservation organisation? A large change occurred from only 53% saying they occasionally or most of the time donated to nearly 81% on the post-surveys. A fairly equal number ratio of people on both the pre-survey, 50%, and the post-survey, 62%, said they would vote for elected officials who support environmental protection most of the time or always. Both on the pre- and post-surveys a low ratio of people would commit to writing letters to your representatives about environmental issues and participating in environmental organisations/rallies. A change was evident in respondents' commitment to avoid items because of their environmental impact, from 51% on the pre-survey to 66% on the post-survey. No increase was seen on commitment to recycling because in both the pre- and post-surveys over 91% stated they always or most of the time recycled, signifying that this practice occurred before and would continue after the visit. Over half of all visitors on both the pre- and post-survey said they read about the environment always or most of the time.

### *5.4 Environmental knowledge*

Four environmental knowledge questions were asked to see if the level of knowledge had increased during the time spent at Rara Avis. The first question asked about leaf cutter practices. The percentage of correct responses rose from 39% to 70% between surveys. The second question asked about what impact climate change would have on the forests of Costa Rica. Both the pre- and post-surveys had a correct response rate of over 72%. Thirdly, respondents were asked to identify the best explanation for why plants and trees grow so well at Rara Avis. A sharp increase occurred with only 26% answering correctly on the pre-survey compared to 61% on the post-survey. The final question asked what the major components of ecotourism are. A slight increase occurred from 88% to 96% from pre- to post-survey for correct responses.

### 5.5 *Open response results*

In response to the question ‘How do you think your experience at Rara Avis has affected you?’ three major responses were seen. The most prevalent answer was a better understanding and more knowledge of the rainforest, conservation and ecotourism practices. Following this, respondents cited gaining a higher awareness of the environment and its importance and why it needs to be protected. A third impact reported by respondents was an increased appreciation for the environment, especially the unique dynamics of the tropical rainforest at Rara Avis. All three of these responses are related to supplementary answers which included: a better understanding of our impact on the environment, a desire to pass the knowledge the tourist has gained to others, and a need to expand support and protection for the environment and conservation. Two responses give an overall sense of how the Rara Avis experience affected ecotourists. Firstly, ‘I already appreciate the values demonstrated by Rara Avis, so I was not surprised to be profoundly affected by the environment’. It makes me feel, ‘even more dedicated to protecting the environment’ (19 May 2009). A second response stated, “Rara Avis has been an excellent experience. To be so isolated, and be able to enjoy the impressive nature has made me realize even more how important it is for humans to become more aware of our impact on our precious planet” (12 July 2009).

## 6 **Discussion**

A few key conclusions can be drawn from the results presented above. Firstly, the general type of person that Rara Avis attracts is one that wants to explore a new place and feel like they are experiencing wilderness. This means they probably already have had some interaction with the environment. Also, they at least have some level of knowledge on the importance of preserving nature and therefore may be affected by a ceiling effect. As a result, statements that concerned the environment and preserving it had response ratios that did not change much from pre- to post-surveys.

There are a few conclusions that can be taken away from the commitment to conservation and environment. Firstly, despite their experience at Rara Avis people are still reluctant to spend the time to write or pressure their representatives and also to become involved in environmental organisations. Again similar to conservation ethic the type of person that visits Rara Avis also has a certain commitment to the environment instilled within in them. Therefore, it is not surprising to see that ecotourists will vote for environmentally minded representatives, read about the environment, and already are committed to recycling. The study did find that the tourist’s commitment to buy goods that had less impact increased, possibly because their eyes were opened even further to what is directly affected by their purchases. This is especially true of protected woods, which were a common discussion topic that occurred at the lodge. The biggest change that was seen from pre- to post-survey was that of a commitment to donate to conservation organisations. Once again, when someone sees what their money can do in person they then have an attachment and more of a reason to use their resources to help a cause.

Overall, this study reaffirms Beaumont’s idea of a ceiling effect and that ‘it seems that in the long term ecotourism may in fact be ‘preaching to the converted’ but still acts as a reinforcer’ (Beaumont, 2001, p.336). Most visitors to Rara Avis know the

importance of the environment and have some level of commitment to help the environment already but the experience reinforces that importance and will cause them to rethink if they are doing enough. Furthermore, it reiterates what other studies have shown that ventures such as Rara Avis should continue to try to expand their cliental beyond the environmentally minded and rugged travellers. They should attempt to incorporate a larger population to therefore create an even larger environmentally consciousness population.

A major finding of this study is that environmental knowledge increases greatly in areas in which most ecotourists do not have previous knowledge. This is seen in the drastic increase in correct responses on the leaf cutter ant practices question and the question on leaf litter recycling. As one of the two guides at Rara Avis during the period of the study we did make a concerted effort to cover these questions, which is one reason why correct responses increased. At the same time, we did not talk about climate change effects on the rainforest, showing that in general the population that visits Rara Avis already has knowledge on this area. Finally, many (88%) already knew the major components of ecotourism. The 8% increase in correct responses and 96% overall correct response rate shows that if ecotourists did not know before their visit almost everyone knows by the time they leave what should be seen in a true ecotourism operation.

Rara Avis is a key case of how informal and formal experiential education can work in ecotourism operations. Between the self-assessment responses and open response questions this study shows that significance knowledge is gained and conservation ethic is improved because of a person's time at Rara Avis. As stated above, over three-fourths of tourists responded that they believed their awareness of environment had increased. Furthermore, over two-thirds stated that knowledge of conservation issues had increased. This is reinforced by the open responses that were received which mainly focused on more awareness, more knowledge and a greater appreciation for the environment, resulting in ecotourists writing that they were more likely to support the environment and conservation. Furthermore, nearly two-thirds of those surveyed said they would be likely to donate to an organisation such as Rara Avis to help conserve the rainforest. Although donations were not actually taken, the intent and responses that were gathered shows that an ecotourism venture such as Rara Avis can have an impact – especially on the knowledge that people have about the environment and its importance, therefore resulting in a desire to become involved in supporting conservation and the preservation the environment.

This case study demonstrates how direct conservation of an area (Rara Avis protecting the rainforest) can lead to indirect conservation (Rara Avis ecotourists donating money to a conservation organisation) on a wider scale, which can result in direct conservation (conservation organisations purchasing and protecting another area of rainforest). Rara Avis was established to show that conserving land could be more profitable than deforesting the land. Therefore, direct conservation can be seen in the nearly 1,500 ha of land that Rara Avis protects as long as it stays operational. As a result every ecotourist is contributing directly to conservation because the money they spend at Rara Avis results in a large piece of land continuing to be largely untouched. In addition, during their time there the information visitors receive and the experiences they have reinforce and enhance their conservation values. The ecotourist departs with these reinforced values, as the survey results show. This may result in indirect conservation efforts such as supporting conservation organisations, becoming more educated on the environment, and educating friends and family about the importance of the environment.

These indirect conservation efforts may therefore result in direct conservation once again through more land being preserved because of money donated or more environmentally conscious decisions being made. A loop of conservation can be seen at Rara Avis because of its efforts with informal and formal experiential education during a tourist's stay at the venture.

## **7 Conclusion: future of ecotourism**

The future of ecotourism is at a turning point. Both the ecotourism industry as a whole and Costa Rica, the home too much of the world's ecotourism, are at a turning point. The word ecotourism is used everywhere and has lost much of its original meaning in many cases. It is time to reinvent the industry and give the edge back to 'real' ecotourism. Ventures such as Rara Avis, where there is a combination of taking ecotourists out of their comfort zone as well as preserving an important piece of biodiversity, are a great example of where ecotourism should return. As the study above shows, this has increased environmental knowledge at least at some level and also has either reaffirmed many people's conservation ethic or converted more people to be more environmentally aware. Through this reaffirmation and conversion, a larger base of conservation minded people can be created to help build the movement towards conserving and protecting our forests, which is one of the three key principles of ecotourism.

Ecotourism ventures should be aware of the Beaumont's ceiling effect and broaden their efforts to include more tourists in the ecotourism movement. This can be done through both informal and formal education through the increase in: non-environmental groups being invited, informational signs/brochures being created, the number of researchers present at a venture and more education related groups being targeted. Future and current ecotourism ventures must bring the true meaning of ecotourism – to protect nature, empower local people and educate the local population and the ecotourist – into their ventures instead of only tackling one of these tenets or doing each very weakly. If this can be accomplished, the support network for ecotourism domestically will be strengthened because locals will see more benefits. Furthermore, as the ecotourist's bubble is broken and tourists see the larger affects of their choice to support ecotourism and therefore the protection of biodiversity and local cultures, more international support for conservation is apt to be seen as well. Such international support may well strengthen the global movement towards ecosystem certification. This transformation needs to be done quickly before the idea of ecotourism becomes any more distilled and future ecotourists become too disheartened to care.

Furthermore, the importance of education in ecotourism is still an under-researched area. Therefore, beyond this study of Rara Avis there needs to be more research concerning how to best incorporate education into ventures. In addition, there also needs to be a stronger emphasis on making sure ecotourism ventures are including education as part of their model of operations. As mentioned at the beginning of this paper, ecotourism can be a great vehicle for sustainable development, which is the only kind of development the planet can afford to have. By incorporating a stronger educational component, it can better create positive change both for our common environment and for the people that are protecting the last of our resources.

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