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Education and Ecotourism: A Framework and Analysis of Education in Ecolodges in Costa Rica and Panama

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EDUCATION AND ECOTOURISM: A framework and analysis of education in ecolodges in Costa Rica and Panama

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ABSTRACT: Education of tourists at nature-based lodges is an important but under-researched component of ecotourism. This paper proposes a framework that identifies and develops a typology of possible educational goals and activities in an ecotourism context. Using data from interviews and participant observation at fourteen leading ecolodges in Costa Rica and Panama, the paper describes, classifies and compares educational efforts directed toward ecolodge guests, with a particular emphasis on the role of nature guides in the educational process. Relationships among several educational goals, tourists' satisfaction, and views of the performance of nature guides are uncovered and explicated. Multiple managerial implications and propositions for future research are offered. **Keywords:** ecotourism, tourism management, nature-based tourism, ecolodges, education.

RESUMEN: La educación ambiental en albergues de naturaleza (ecolodges) es un componente importante, aunque poco estudiado, del ecoturismo. Este artículo propone un modelo conceptual para identificar y desenvolver una tipología de posibles objetivos y actividades educacionales en contexto de ecoturismo. Usando datos de encuestas y observación participante en albergues de naturaleza de la Costa Rica y del Panamá, el artículo describe, clasifica y compara las acciones dirigidas a los huéspedes de los albergues, con particular énfasis para el rollo de los guías de naturaleza en el proceso educativo. Son evidenciadas las relaciones entre los objetivos educacionales, la satisfacción de los turistas y las percepciones sobre las performances de los guías de naturaleza. Son aún discutidas las múltiples implicaciones y sugestiones para futuras investigaciones. **Palabras clave:** ecoturismo, gestión turística, turismo de naturaleza, albergues de naturaleza, educación.

RESUMO: A educação ambiental em albergues de natureza (ecolodges) é um componente importante, embora pouco estudado, do ecoturismo. Este artigo propõe um modelo conceptual para identificar e desenvolver uma tipologia de possíveis objetivos e atividades educacionais em contexto de ecoturismo. Usando dados de entrevistas e observação participante em albergues de natureza da Costa Rica e do Panamá, o artigo descreve, classifica e compara as ações dirigidas aos hóspedes dos albergues, com particular ênfase para o papel dos guias de natureza no processo educativo. São evidenciadas as relações entre os objetivos educacionais, a satisfação dos turistas e as perceções sobre as performances dos guias de natureza. São ainda discutidas as múltiplas implicações e sugestões para futuras investigações. **Palavras chave:**

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INTRODUCTION

Ecotourism is nature-based travel that embraces principles of sustainability, and thus is managed to conserve the natural environment on which it depends, provide economic benefits to the local community and the industry, and to *educate and satisfy the tourists* (Dowling and Fennell, 2003; Osland & Mackoy, 2004; United Nations World Ecotourism Summit, 2002; Weaver, 2008). Education of tourists can affect their awareness, understanding, appreciation, values and behaviors regarding the natural environment and the local community, thus helping to accomplish the ideals of ecotourism; education can also affect tourist experiences and satisfaction, contributing to the economic performance of the ecolodge.

Despite widespread assertions of the importance of education in ecotourism (e.g. Gilbert, 2003; Kimmel, 1999; Marion & Reid, 2007) with tourists learning about both nature and local cultures (Fennell, 2001), review of the multi-disciplinary ecotourism literature uncovers little empirical research or theory, particularly at the level of the ecolodge. Ecolodges are the accommodation facilities and services established in, or very near, natural areas visited by ecotourists. Ecolodge owners/managers are well positioned to help educate their employees, the local community, and tourists. Although managers utilize numerous educational offerings, nature guides are the primary facilitators of visitors' environmental learning, serving as intermediaries between the natural environment and the guests (Ballantyne & Hughes, 2001). Recent research has found that a primary motivation of tourists to visit ecolodges is to learn about and explore nature and locations of cultural interest (Chan & Baum, 2007; Kwan, Eagles & Gebhardt, 2008). Thus, integrating environmental and cultural education into the overall ecolodge experience is important in satisfying tourists, as well as in helping to conserve nature.

This research seeks to explicate theories and best practices in environmental education in the context of ecotourism. We describe, classify and compare the educational efforts directed toward guests of leading ecolodges in two popular ecotourism destinations in Central America (Costa Rica and Panama). We uncover relationships among elements of education and highlight educational goals, tourists' satisfaction, and views of the educational performance of guides in ecolodges in Costa Rica and Panama. In the following sections we review and organize environmental education and ecotourism literature from several disciplines, describe our research methodology, discuss our results, and then offer conclusions with managerial recommendations.

LITERATURE REVIEW

Education is a widely-recognized element of ecotourism; many authors and organizations assert that education and learning are integral

and essential elements (Blamey, 1997; Buckley, 1994; Fennell, 2001; Gilbert, 2003; Osland & Mackoy, 2004; The International Ecotourism Society, 1993; United Nations World Summit on Ecotourism, 2002). One of the first discussions of ecotourism places education at the center of this type of tourism (Ceballos-Lascarain, 1991). Ecotourism is distinguished from nature-based tourism by its emphasis on education and the interpretation of nature (Rodger, Moore, & Newsome, 2007). The use of nature tours as a product offering of a lodge can be a criterion in determining if a lodge is an ecolodge (Batta, 2006; Osland & Mackoy, 2004). These tours are led by nature guides employed, under contract, or arranged by the ecolodge. For example, Batta (2006) concludes that the lack of nature guides, signage, and interpretation materials at three Himalayan tourist destinations reveals that ecotourism does not occur there. It is just nature-based tourism, though some government officials call it ecotourism. Nature guides play a significant role in the education of tourists, the conservation of nature, and the financial success of the ecolodge (Ballantine and Hughes, 2001).

Education is an important element in ecotourism for several reasons. For example, environmental education helps tourists gain greater awareness and understanding of natural phenomena (Ham, 1992; Palmer, 1998). Traditional, analytical approaches to environmental education center on a guide or teacher finding, identifying and describing particular elements of a natural area, such as bird and mammal species. This is an organism-focused view of biology and environmental education (Marion & Reid, 2007). More holistic, ecological approaches toward ecotourism education concern theories and themes. These include content on how the elements of a particular ecosystem are integrated, or how a universal phenomenon such as ecological adaptation is evident in the particular natural area (Kimmel, 1999; Marion & Reid, 2007).

Unlike intellectual approaches to learning in traditional biological education, ecotourism education offers fruitful opportunities for emotional elements of learning (Kimmel, 1999). Guides become facilitators for tourists to experience nature and to gain a deeper appreciation for natural phenomena. This can become a process of facilitating awe and wonder (Ryan, Hughes, & Chirgwin, 2000). Miles states that "Learning about wilderness is not like learning arithmetic or economics or how the political system works. It is more akin to learning what is beautiful about a Mozart concerto, a Rembrandt painting, or a Shakespeare sonnet" (1991, p. 6).

Rather than dichotomizing nature education as a science or an art, or advocating reason or emotion, many progressive environmental educators help learners connect with nature in body, mind, and spirit (Moore, 2008). Spiritual connections between people and places can be highlighted (Weiler & Ham, 2001). This approach has been classi-

fied as a part of an interpretive, holistic framework of environmental education (Jamal, 2004).

Education can also be a key element in helping overcome negative impacts of tourism on the natural environment. Tourists do impact natural areas and can harm wildlife (Sekercioglu, 2002), for example by disturbing birds tending nests or by feeding candy to monkeys. But education programs in natural areas encourage visitors to consider the environmental and social consequences of their actions. This could enhance environmental ethics and lead to self-directed modification of the visitor's personal behavior. This approach to ecotourism education has been classified as part of a philosophical, social science framework that seeks to influence the values and conduct of tourists (Marion & Reid, 2007). The key goal is to reduce inappropriate behaviors that harm wildlife and the natural environment, to help conserve nature (Oram, 1996; Randall & Rollins, 2009; Rodger, Moore & Newsome, 2007). Palmer (1998) argues that guides should try to help visitors develop an ethic of personal responsibility and stewardship that will also affect their behaviors in their home locations.

Shianetz and Kavanagh (2008) utilize a systems, stakeholder approach to ecotourism education that posits that ecotourism operators should center on tourism sustainability by increasing the environmental awareness and ethical behaviors of visitors, staff, and the neighboring community. Community educational activities on-site and in schools, as well as employee training, extend environmental education beyond the visitor. Shianetz and Kavanagh (2008) state that expanding the scope of education is necessary to sustain nature in an area over the long term.

Anthropologists and political scientists from the critical research paradigm see ecotourism education as an opportunity to increase tourists' awareness and understanding of excluded, minority groups, such as local indigenous cultures. Native peoples' views, knowledge, and relationships with nature are highlighted (Zanotti & Chernela, 2008). This integrates the element of ecotourism that centers on the local community (Osland & Mackoy, 2004), creating respect for local cultures and communities and benefitting, rather than exploiting them. Many definitions of ecotourism integrate the ideal to "satisfy tourists," as does a customer-oriented marketing framework (e.g. Ballantyne & Hughes, 2001). Tourists' enjoyment becomes the primary goal of the guide. Satisfied tourists tell others of their positive experiences, which can increase the number of visitors and also stimulate repeat visits. In birding-oriented tours this can center on finding particular rare bird species that will increase the tourists' life lists of "seen species." But excessively focusing on satisfying the tourist can be detrimental to target species and to the environment (Kimmel, 1999). The minimal-impact goal of ecotourism can easily be overlooked by guides and tourists on wildlife tours (Rodger, Moore, & Newsome, 2007).

Despite the rather large conceptual literature on environmental education, relatively little empirical work has been done on educational practices and outcomes in ecotourism. Most empirical studies have found that ecotourism education attempts to build awareness and understanding, rather than attitudes or behaviors. Australian ecotour guides described their roles as informers, focusing on information, more than on environmental interpretation or on influencing attitudes toward nature (Ballantyne & Hughes, 2001). Most of the studies are based on one site or case. Wildlife tours in an area of Australia focused on finding birds, rather than on educating or interpreting nature (Rodger, Moore, & Newsome, 2007). Hughes and Morrison-Saunders (2002) studied the impact of trail-side interpretive signs on visitor knowledge. They found that interpretive signs increased tourists' perception that the ecotourism experience was a learning activity, but no increase in visitors' knowledge was found. Further, frequent use of signs along trails may unintentionally ruin some visitors' sense of exploration and discovery, creating negative attitudes toward the ecotourism experience (Bramwell & Lane, 1992). Madin and Fenton (2004), studying visitors to the Great Barrier Reef, found that the number of interpretive activities to which visitors were exposed was correlated with key cognitive outcomes regarding the reef environment and human impacts on the reef.

There have been only a few empirical studies which extend the focus of educational effects beyond awareness and understanding. Peake, Innes and Dyer (2009) conducted a large scale survey of whale watchers at Hervey Bay, Australia. They examined communication message comprehension, but also studied impacts on tourist emotional responses, satisfaction, values, and "guide-suggested conservation actions" (p. 120). Weiler and Smith (2009) formally considered the impacts of interpretive activities on a system of educational outcomes that included cognition, affect and behavior, though their study was not conducted in an ecotourism context.

Ecotourism can help provide an experiential element to learning *in* nature that can have more behavioral effects than classroom and on--line learning *about* nature. Tisdell and Wilson (2005) provide some empirical evidence that ecotourism promotes tourists' desire and intention to conserve nature, in the case of educational experiences with sea turtles in a natural setting.

Some authors characterize the primary function of education in ecotourism as being behavior change (Randall & Rollins, 2009). In a sustainable tourism context, the short- and long-term behavior change of tourists is considered a key normative goal, and education is considered to be one cost-effective method of achieving this goal. However, equally important are the intrinsic rewards tourists receive from

their educational experiences. To the extent that cognitive and affective outcomes of educational experiences contribute to tourist satisfaction, tourists will be more likely to repeat their trips and to encourage others to engage in such trips (Weiler & Smith, 2009).

We synthesize the disparate ecotourism education literature into the following goals and outcomes:

* Cognitive (awareness, understanding of nature and local cultures)
* Emotional (appreciation/awe, enjoyment, affection for nature and cultures)
* Ethical (values, ideals, norms in interactions with nature and local cultures)
* Volitional (produce minimal negative impact, conserve nature around the world)

The following model integrates and shows likely relationships between the key goals and outcomes of ecotourism education. We use this model to organize both our data collection, and our discussion of results.

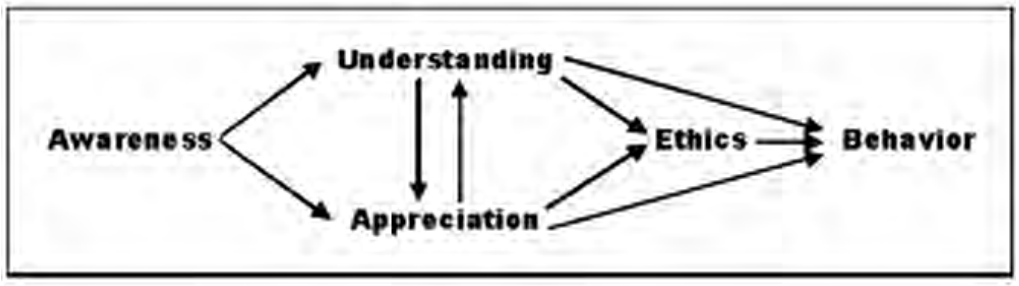

Figure 1 – Model of Education Goals and Outcomes

RESEARCH METHODOLOGY

Although ecotourism can occur in virtually any nation, much attention has centered on ecotourism in high-quality, but rapidly diminishing natural areas (Primack, 2000). Since biological diversity tends to increase as latitudes decrease, and subtropical and tropical natural areas are becoming highly endangered, developing nations of the tropics are especially attractive to ecotourists and conservation biologists (Myer et al., 2000). In addition, these areas, especially in Latin America, appear to be underrepresented in sustainable tourism research generally (Lu & Nepal, 2009). To explore the role of education in ecolodges, we selected two representative nations in Central America that have extensive, but threatened natural areas, and significant yet different levels of ecotourism development – Costa Rica and Panama.

To create our sample we selected lodges that met all three of the following criteria for an ecolodge: located in or near a natural area, promote themselves as for ecotourists, and offer nature tours led by a guide.

We attempted to include a range of different types of ecolodges to gain a broad perspective on issues, and thus implemented a judgmental, quota sample. The lead author made two research trips to Central America, each four to five weeks in duration. The exploratory research design included on-site analyses of 14 ecolodges in the two nations, using in-depth personal interviews with 14 ecolodge owners and/or managers and 18 nature guides, as well as participant observer techniques (Bowen, 2002) and discussions with tourists while engaging in 20 guide-led trips. Interviews were conducted in both Spanish and English, using pre-tested, semi-structured interview guides of questions. An observation grid was used to describe and assess the teaching activities that occurred on nature tours. We utilized the five elements in Figure 1 to organize data collected from the tours and the guides. Another grid was used in recording observations of each ecolodge and was partially based on a list of educational offerings from Rome and Romero (1998).

This multinational, exploratory research design is far broader and more representative than the more commonly-used single case study method, enabling patterns to be uncovered. Our qualitative design also goes deeper than mail surveys, uncovering factors and issues that are often overlooked in structured, descriptive research designs. However, given that the lodges were not chosen at random, the quantitative results in this study are not appropriate for making formal statistical inferences to the population of all ecolodges in the region. We reviewed all field notes and conducted qualitative analyses as recommended by Bowen (2002). We also conducted correlation and difference of means analyses to help uncover relationships within our sample data.

RESULTS AND DISCUSSION

Lodge Characteristics and Educational Offerings

Most of the lodges are relatively small, with a median number of 16 rooms and capacity for 65 guests; yet the variance is large, with total number of rooms ranging from four to 198. The area of land owned by the lodge owners that these lodges are set in is rather large. The median amount of hectares totals 101.5. Eleven of the lodges are part of substantive private nature reserves, with the largest being Bosque de Paz, which protects 1000 hectares of mostly primary forest in Costa Rica. Eight of the 14 lodges in our sample primarily target casual ecotourists, who mostly engage in general nature observation and relaxation, and who usually require significant amenities (Osland & Mackoy, 2004). Three of the lodges target dedicated ecotourists, who mostly engage in specialized ecotourism activities, such as birding, and who are willing to accept limited infrastructure and amenities

(Osland & Mackoy, 2004). We also included in our sample one lodge that targets guests seeking to do scientific research and/or extensive educational activities (University of Georgia's San Luis Ecolodge in Costa Rica) and one lodge focusing on agricultural ecotourism, with a working coffee plantation and coffee tours integrated into birding and general nature activities in the reserve (Finca Lerida – Panama.)

We found significant country differences in the ages of the ecolodges. According to our respondents, Costa Rica's ecotourism industry has been established as a strategic priority for a longer time than Panama's. On average the Costa Rican ecolodges in our sample have been operating for 16 years, compared with less than ten years in Panama. Hotel Belmar, in Costa Rica's famous Monteverde Cloud Forest area, is the oldest lodge, at 24 years. We also uncovered country differences in the number of **educational offerings**. The average number of types of educational offerings at Costa Rican ecolodges was 9.4, whereas Panamanian ecolodges in our sample only had 6.7 different types of offerings. Potential educational offerings include: 1) nature and/or cultural tours, 2) guides, 3) websites, files, links, 4) exhibits/displays on nature and/or local cultures, 5) library of nature-based books, 6) onsite lectures, workshops, seminars, 7) self-guided nature/interpretive trails, 8) interpretive signs/labels, 9) nature-oriented brochures, 10) special experiential opportunities, 11) informed, available staff, and 12) wildlife viewing facilities, including bird feeders. Figure 2 displays the frequency of each type of educational offering, by nation.

All of the 14 ecolodges offer tours and guides, whether employed, contracted, or arranged. At some lodges guided tours are part of the package, but at most lodges guests must pay additional amounts for nature tours in the area. Costa Rican ecolodges more extensively use nature exhibits, lectures and workships, self-guided nature trails and interpretive signs, and brochures about nature. This difference may be due to the fact that the overall ecotourism industry is more developed in Costa Rica than in Panama, and that the eco-lodges in Costa Rica have been established for a longer time than those in Panama. There does not appear to be any relationship between the number of educational offering types and number of hectares of privately-held land, ecolodge size (defined in terms of maximum number of guests or number of rooms), or ecolodge prices. Thus, educational orientation is not related to scale or price-point. However, there is an interesting relationship between owner nationality and offerings. As seen in Table 1, it appears that foreign owners are more likely to have many types of educational offerings. Four of the top six lodges in terms of types of educational offerings are owned by foreigners. With the exception of the coffee farm with nature tours in Panama (Finca Lerida), all of the foreign-owned lodges have a wide variety of educational offerings.

Table 1 – Lodge Characteristics and Educational Offerings

Ecolodge Name	Country	Area (Ha)	Target Ecotourist type	Guests	Rooms	Age	Owner nationality	Number of educational offerings
Bosque de Paz	Costa Rica	1000	Dedicated	25	12	14	Costa Rica	8
Rancho Margot	Costa Rica	153	Agricultural	70	30	3	Chile	12
Arenal Observatory	Costa Rica	350	Casual	120	51	20	Costa Rica	8
Ecolodge Lago Coter	Costa Rica	330	Science / Ed.	80	40	19	France	9
San Luis Ecolodge	Costa Rica	66	Casual	126	32	14	US	11
Hotel Belmar	Costa Rica	50	Casual	60	26	24	Costa Rica	9
Monteverde Lodge	Costa Rica	5	Casual	60	28	19	US	9
Cieltito Sur	Panama	23	Casual	8	4	8	Panama	8
Los Quetzales	Panama	450	Casual	90	41	18	Panama	6
Canopy Lodge	Panama	50	Dedicated	20	12	4	Panama	7
Canopy Tower	Panama	0	Dedicated	19	12	10	Panama	9
Gamboa Rainforest Resort	Panama	137	Casual	400	198	9	Panama	7
Bocas Inn	Panama	1	Casual	14	7	11	Panama	7
Finca Lerida	Panama	240	Agricultural	78	37	8	US	3
Mean		203.9		83.6	37.9	12.9		8.1
Median		101.5		65.0	16.0	12.5		8.0
Mean: Costa Rica		279.1		77.3	31.3	16.1		
Mean: Panama		128.7		89.9	44.4	9.7		

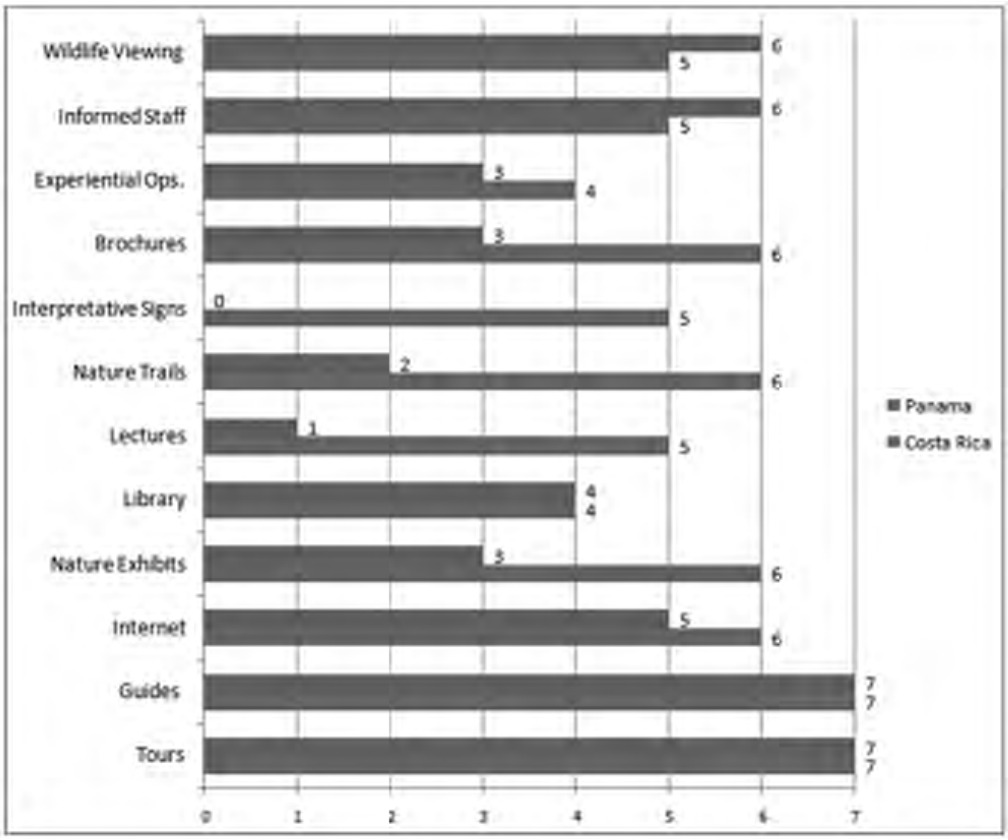

Figure 2 – Frequency of Educational Offerings

Guides and Tours

All of the ecolodge owners, managers and guides note that nature guides are the most important educational offering. Many stated that nature guides are the most critical element for the success of the lodge. "Visitors come here because of the reputation of our guides," noted a Panamanian lodge manager. Owners described guides as "the interpreters of nature," who are critical because they "connect people with nature." "Our guests need a guide to see what they have come for," declared one lodge owner. All of the lodges offer nature tours on the lodge property or at nearby natural areas, ranging from two hours to all day long, and most of the guests participate in a nature tour; so most guests spend more time with a guide than with any other lodge representative. In lodges with employed guides, most guides also interact with and attend to the needs of guests throughout their stay. A guide in Costa Rica proudly stated, "We're the face of this place. Their satisfaction depends on their time with us." A manager in Costa Rica also made the point that guides give guests "first hand involvement with a local," thus, indirectly helping them to learn about the culture.

The educational content, goals, and activities of guides were analyzed from 20 ecotours directly sponsored or arranged by the ecolodges, and by interviews with guides after the tours were completed. Fur-

ther, tourists' and the lead author's assessments of four elements of performance - satisfaction with the tour and with the guide, and evaluations of the guide's educational and overall performance - were recorded. Using the model (Figure 1) that we developed from a review of the literature, five sets of content/goals/activities were organized by *awareness* (identification of species), *understanding* (human uses of species, behaviors of species, interactions of species), *appreciation* (appreciation, enjoyment), *ethics* (conservation values, personal responsibility), and *behaviors* (minimal impact on nature, help to conserve nature). Figure 3 displays the guides' stated importance of ten activities versus recorded observations of their actual behaviors during the ecotours.

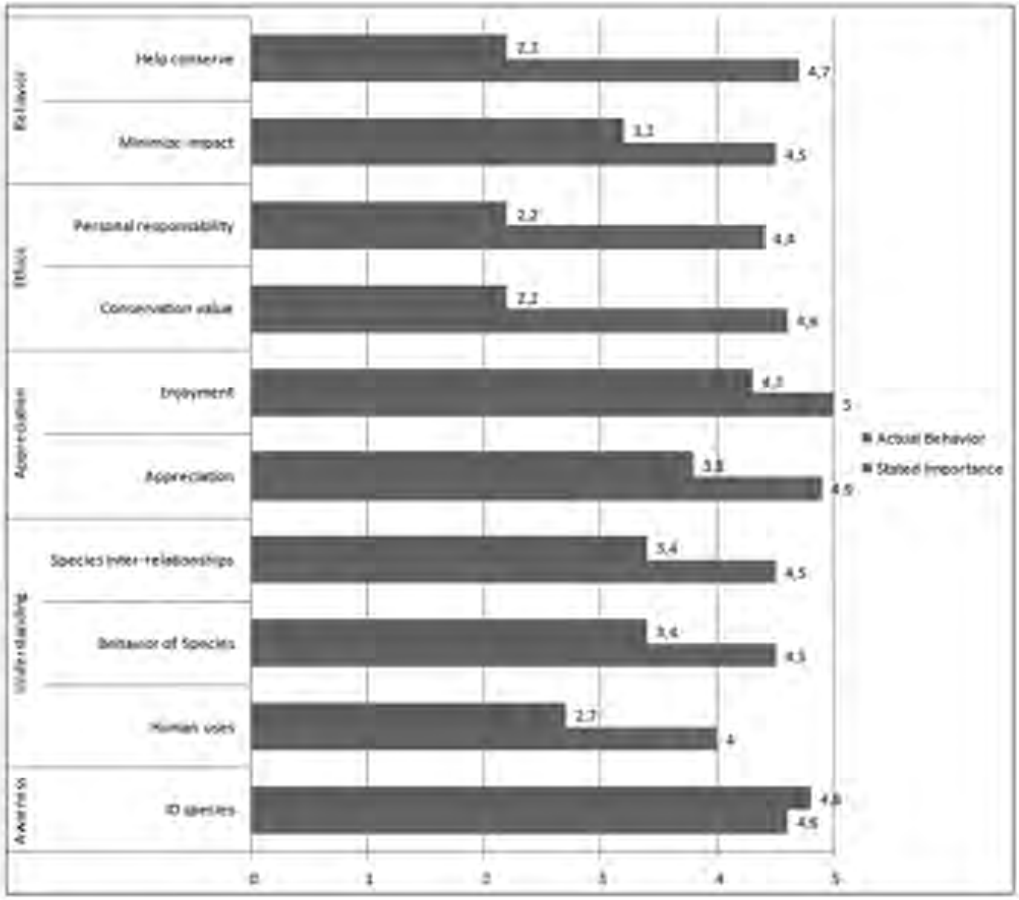

Figure 3. Stated Importance versus Actual Behavior of Ecotour Guides

Awareness

The primary activity of guides on the tours in our sample was finding, showing, and identifying birds and mammals. Plants and other organisms were also identified on most tours. Most guides carried spotting scopes with tripods, which they used to zoom in on remarkable species at a distance, and then attempted to give each tour participant

the opportunity to observe the named bird or mammal through the scope. This activity was consistent with the high level of importance guides placed on identification of species. Guides' emphases on *awareness* did not correlate with high levels of emphasis on other educational goals or with high levels of satisfaction with the tour or guide, or with high ratings of educational or overall performance of the guide.

Understanding

From a learning perspective awareness, is a prerequisite for understanding about nature and culture, which is an important educational goal. But guides did not spend much time helping tourists understand human uses of species, behaviors of species, or interactions between species. Occasionally guides discussed topics such as the interdependent, mutually-beneficial relationship of a particular bird species and plant, as the Resplendent Quetzal and the fruit-bearing almendra tree. Guides who sought to enhance tourists' understanding also sought to help develop tourists' appreciation of nature and their environmental behaviors. For those guides who tried to help tourists' understand natural phenomena, the impact on tourists' assessments of their performance and on satisfaction with the tour and guide was significant in our sample. Eco-tourists became attuned to and valued discussions of animal and plant behaviors that helped them understand nature better. We found several significant relationships based on understanding, which we highlight as three important propositions of this study on education in ecolodges:

P1: Guides' attempts to enhance tourists' understanding of species' behaviors and interactions leads to greater appreciation and enjoyment of nature by the tourists.

P2: Guides' attempts to enhance tourists' understanding of species' behaviors and interactions are correlated with goals to help tourists' develop environmental behaviors of minimal impact on nature and conserving nature.

P3: Guides who seek to improve tourists' understanding of species' behaviors and interactions are highly rated by tourists and produce high levels of satisfaction with the tour and the guide.

Appreciation

Guides rated developing tourists' appreciation of nature and their enjoyment in nature as their two most important goals. However, the guides' actual behaviors, especially to enhance tourists' appreciation of nature, fell short of their stated intentions. It also appears to take more than simply identifying animals and plants to highly satisfy most eco--tourists. There was a positive correlation between guides' attempts to

stimulate appreciation for nature and tourists' satisfaction with guides, and with tourists' assessment of guide performance.

Guides who sought to help visitors use multiple senses to understand and experience nature appeared to be most effective in enhancing appreciation. For example, some guides asked tourists to identify particular odors, such as the pleasant smell of vanilla from certain plants, and the unattractive smells from javelinas (a type of wild hog), which signals their recent presence. We found a positive relationship, which we state as a proposition:

P4: Guides who seek to enhance tourists' appreciation of nature are highly rated by tourists and produce high levels of satisfaction with the guide.

One guide stated that a reason he tries to help tourists appreciate nature and enjoy themselves in nature, is that he believes they will learn more on the tours and will seek to learn more on their own after the tour.

Ethics

Despite the high importance that most ecotour guides place on helping visitors develop conservation values, and beliefs such as personal stewardship of nature, guides actually did little to try to influence the ethics of tourists. One guide mentioned that he "doesn't want to preach at them." Nor is it likely that guides have enough time to affect tourists' values and beliefs in the short time they have with visitors. (Most tours have a duration of about two hours.) Guides stated that they do believe that tourists' ethics affect their actual behaviors on tours and back at their homes.

Behavior

Guides also place a high level of importance on influencing tourists' behaviors, particularly in having a minimal impact on nature while on tours and on stimulating visitors to help to conserve nature as a long-term activity. A guide in Costa Rica declared that "My primary goal is to have this impact on people, and it motivates me the most; but I talk about it the least." Our overall findings are similar to that comment. Occasionally, guides who give pre-tour talks will mention the need to act in certain ways while on tours, such as staying on trails. But rarely were reasons given for this and other attempts to minimize tourists' impact on nature.

An unexpected observation centers on the role of tips for guides in the behavior of impact on nature. Apparently tips constitute a significant source of income for guides, especially at lodges that cater to wealthy, dedicated eco-tourists who come with specific goals of what they want to see. For example, some birders visit particular areas to

see national endemic species. If the guide finds and shows them these "target birds," the tips can be quite large. The prospect of tips can lead to a conflict with educational goals concerning conservation ethics and behaviors. The lead author observed isolated instances in which guides did whatever it took to find and show rare birds to guests, including cutting out plants to create openings and playing bird recordings for an extended time at a nest location to elicit a vocal and physical response from a target bird. The resulting stress experienced by the birds, and the disruption of feeding chicks, can have negative impacts on survival rates (Sekercioglu, 2002).

It appears, in summary, that guides' actual behavior closely matched their stated importance of educational goals for *awareness* and *appreciation*, somewhat matched their stated importance for *understanding*, and fell significantly short of their stated importance for *ethics* and *behaviors*. Thus, our final proposition is:

P5: Guides tend to emphasize awareness and appreciation goals, and to de-emphasize ethics and behavior educational goals.

CONCLUSIONS AND MANAGERIAL IMPLICATIONS

Many types of educational offerings are being used in ecolodges in Panama and Costa Rica, especially in the latter, well-developed ecotourism destination. But the educational offerings in both nations appear to be arbitrary, without a clear set of goals and plans about educating and satisfying the guests. Identifying these goals, uncovering linkages between them, and providing a framework for analyzing these educational issues are part of this project's unique contributions to the literature.

Owners, managers, guides, and tourists agree that the most important educational element at ecolodges is guides and the tours they lead, and many managers believe that guides are critical to the success of the ecolodge. Yet, even the use of guides often appears to be a response to tourists' requests for guides, or as a means to increase revenue, rather than an intentional element of educating tourists, which is a distinguishing element of ecotourism. We recommend that ecolodge owners and guides use our model of five educational goals and outcomes as a basis for evaluating what they are currently doing in their educational efforts, and as a framework for strategically and intentionally developing plans for what to focus on in the future and why. In particular, efforts to enhance ecotourists' understanding of the behaviors and interactions of species are likely to have some of the largest effects on visitors' understanding and appreciation of nature, as well as on their satisfaction.

Ecolodge managers should carefully consider their efforts to recruit, train, and retain guides, especially considering the variety of roles guides can adopt. The best guides are far more than just good bird and plant

finders and identifiers. They help guests understand the behaviors and interactions of species, stimulate appreciation for nature, and at least model environmentally-sensitive ethics and behaviors. Fluency in the targeted guests' language is critical for effective communication about complex phenomena. The lodges that have been most effective in retaining outstanding guides also compensate them well. This includes generous salaries, training opportunities, and trips to other countries when doing promotion. One Costa Rican company with several lodges offers an annual retreat with workshops and speakers for their employed and contracted guides.

One specific content area to consider integrating into educational efforts is the local culture. We found little evidence that guides help guests learn about culture, including both indigenous peoples and ways that humans have interacted with other species and the land. Seeking to enhance awareness, understanding, and appreciation for local culture are promising opportunities for ecolodges to implement, and would be consistent with the ideals of ecotourism, which integrate the local community (Fennell, 2001).

Also, developing strategies for addressing ethics and behavior educational goals appears to be a task upon which managers should reflect. For example, nature guides seem to underemphasize these two areas despite rating their importance quite highly. Managers might focus on uncovering guide "best practices" in these areas so these may be disseminated to other guides. In addition, managers might try to bolster other relevant educational activities within the lodge, or in pre- or post-visit communication with tourists. However, we recognize that addressing these two educational goals may be perceived as risky by managers because attempts to change ethics and behavior often might appear heavy-handed to tourists.

We propose that the framework introduced here can serve as a structure for developing and testing educational offerings in a comprehensive manner. Ultimately, this could support a catalog of possible cost-effective educational offerings which can be targeted towards specific educational objectives, and thus can become a valuable tool to ecotourism managers and policy-makers.

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