

Environmental Values and Behaviours of Adventure Tourism Operators: The case of the Tsitsikamma, South Africa

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Abstract

Adventure tourism is one of the fastest growing sectors of the tourism industry. As a unique form of nature-based tourism, in that it involves active engagement with nature, the relationship between the adventure tourism industry and the environment has yet to be adequately explored. The vital role of the environment in adventure tourism has been mentioned throughout literature, but the environmental perspectives of adventure tourism operators are largely unknown. This study examines the attitudes and practices of adventure tourism operators through data collected from five companies in the Tsitsikamma, South Africa, a hot-spot for adventure tourism in a unique environment. It first demonstrates the wide spectrum of initiatives taken by different adventure tourism companies that operate within this unique and fragile environment. The results also show that this group of adventure guides do have some sense of environmental awareness, though environmental values were, generally, relatively low when compared with other similar studies. However, this group of adventure guides do demonstrate a number of behaviours taken to minimize the environmental impact of these activities.

Keywords: adventure tourism, New Environmental Paradigm, South Africa, environmental values, environmental management, adventure guides

Introduction

In recent years adventure tourism has become a global phenomenon. Once relatively limited, the increase in commercial adventure tourism has led to it becoming one of the most significant tourism sectors (Adventure Travel Trade Association, 2015). It is defined as 'guided commercial tours where the principal attraction is an outdoor activity that relies on features of the natural terrain, generally requires specialized sporting or similar equipment, and is exciting for tour clients' (Buckley, 2006, p.1). Its growth has become particularly apparent in the developing world, due to the vast natural resources available and the relatively low capital needed to develop many types of adventure tourism (Rogerson, 2004). South Africa, in particular, has seen a recent growth in adventure tourism, and in 2016 was ranked the top adventure destination (Belles & Winternberg, 2015). It has also been featured in the United Nations World Tourism Organisation's report on the state of adventure tourism (Beckmann, Martin, Petrak, & Sproule, 2014). There are many reasons why South Africa is suited for adventure tourism, but one of the most notable is the striking and unique landscapes which provide ideal settings for a range of activities considered adventure tourism (McKay, 2016). Although the environment, undoubtedly, plays an important role in adventure tourism (Buckley, 2006; Pomfret, 2006; Swarbrooke, Beard, Leckie, & Pomfret, 2003), there has been little research on the perceptions of adventure tourism operators towards the environment. A fair amount of research has investigated the physical environmental impacts of adventure tourism activities on the environment (Giddy, 2015). The negative impacts mentioned are considered a critical issue facing the industry as a whole, as these environments are not only a primary draw for adventure tourists, but also often critical for the activity to take place (Williams & Soutar, 2005). The study

at hand, therefore, seeks to fill a gap by investigating the perceptions of adventure tourism operators towards the environment generally, their environmental behaviour while at work and the measures taken by operators to minimize the damage to the environment caused by the activity. This information has important implications and should be used in the effective development of environmental management strategies for the nature-based and adventure tourism industries.

Adventure Tourism in South Africa

Although adventure tourism is rapidly growing South Africa, research on the subject in this region is relatively limited. A few studies have examined issues and challenges facing the adventure tourism industry as a whole. Rogerson (2007) noted some of the challenges facing the development of adventure tourism in South Africa. One was the lack of marketing, particularly marketing South Africa as an 'adventure destination.' In addition, the relatively small size of companies, which are typically run by enthusiasts creates issues for effective business management. Finally, Rogerson (2007) found that one of the primary issues facing the growth of the industry is the need for qualified staff with specific skills. McKay (2013a), in a review of management issues facing the adventure tourism industry in the Southern African Development Community (SADC) also cited issues of marketing and skilled labour as problematic in the development and sustainability of adventure tourism in South Africa. However, McKay (2013a) noted a number of additional obstacles to effective development and management of the industry in this region including the development of standardization, particularly with regards to safety, and risk management strategies, ensuring that the industry increase the ability for the local economy to benefit from development, and the environmental management implications associated with adventure tourism. In a more recent study, McKay (2016) found that the geographic distribution of adventure tourism operations is uneven, with the majority found in the Western Cape and KwaZulu Natal. She argues that there is great potential for increased development of adventure tourism in the remaining provinces. Specific activities considered adventure tourism have also been the topic of some research in South Africa. McKay (2014a) found that the South African bungee jumping industry is globally competitive, with iconic bungee jumping sites, most notably the Bloukrans Bungee, one of the highest in the world. In addition, a few studies have examined the white water tourism industry. McKay (2014b) analyzed the characteristics of white water adventure tourism along the Ash River, KwaZulu Natal, comparing rafting and kayaking. She found very different profiles between the two industries, with rafting much more commercialized than kayaking. Greffrath and Roux (2012) sought to demonstrate the significance of white water rafting along the Vaal River in the Vredefort World Heritage Site. They found that not only were participants exceedingly satisfied with their rafting experiences, it was also the most important reason for visiting the area for the majority of tourists. This demonstrates the significance of adventure tourism activities for the sustainability and growth of specific tourism destinations, especially in South Africa.

A few studies have examined the role of the environment in adventure tourism, with a focus on South Africa. McKay (2013b) addressed issues of land use conflict between the local government and the tourism industry along the Ash River in South Africa. The government has proposed the development of a hydroelectric plant which would essentially destroy tourism on the river. This would have significant consequences for the local economy, which is depend on tourism. Giddy and Webb (2016b) found that the environment is playing an increasingly important role in the motivations of adventure tourists, particularly in the context of specific activities. In another study, Giddy and Webb (2016a) found that the natural environment is

significant in several aspects of adventure tourism participation. According to their findings, participants in commercial adventure tourism not only seek out interactions with the environment, but also the primary reason for destination selection was due to the natural features of the environment. This supports authors such as Bell and Lyall (2002) who argue that in the current commercialized context of adventure tourism, participants seek to engage with new and unique environments. They assert that the experience is only valid if it occurs in a unique setting. The fact that South Africa is seen to provide the necessarily unique environment in which to participate in adventure tourism has positive implications for successful development in the future.

Environmental Impacts of Adventure Tourism

A number of studies have investigated the physical environmental impacts caused by adventure tourism. The majority of these studies have been activity-specific and therefore a wide range of environmental impacts have been linked directly to adventure tourism. For example, research has found a number of impacts linked to hiking, a common adventure tourism activity considered relatively low impact, one of the most significant of which is trampling. Trampling can cause a number of environmental issues such as vegetation loss, loss of biodiversity, introduction of alien species, and disruption of wildlife (Cole, 2004; Dodds, 2009). In addition, scuba diving has been shown to have a number of environmental impacts including destruction of already fragile reef systems (Doiron & Weissenberger, 2014; Gossling, Linden, Helmersson, Liljenberg, & Quarm, 2008; Lucrezi, Saayman, & van der Merwe, 2013). Another adventure tourism activity, which has been the discussion of much research, is mountaineering and trekking (Nepal, 2003; Zurick, 1992). In the case of trekking and mountaineering in Nepal, a number of environmental impacts have been found, mostly notably the large quantity of waste that has been deposited in these fragile environments (Nepal, 2003). Other impacts include the use of limited resources, including forest destruction, as wood provides heat to tourists in the extreme environments of Nepal.

Aside from activity-specific impacts, a few authors have investigated the contribution of adventure tourism to global climate change (Becken & Simmons, 2002; Buckley, 2010; Simmons & Becken, 2004). Simmons and Becken (2004) found that niche tourism, such as adventure and ecotourism, have exceptionally high carbon emissions when compared with traditional mass tourism, such as resort tourism. This is due to the “cost of getting there,” as many of these activities are found in remote and often fragile environments. It is clear from this body of work that there are a number of environmental concerns associated with adventure tourism, however far fewer have investigated means of mitigating these impacts. Operators are crucial to the implementation of environmental management strategies and therefore the first step to minimizing environmental impacts is to understand their perceptions of the environment in the context of their operations.

Environmental Values and Behaviours in the Tourism Context

The environmental values and behaviours of tourists is important, particularly in the rapidly growing nature-based tourism sector. Environmental values are seen to influence environmental behaviour, which has implications for the often fragile natural environment in which the majority of nature-based tourism occurs (Johnson, Bowker, & Cordell, 2004). The most common tool for assessing general environmental values is the New Environmental Paradigm (NEP). First

developed by Dunlap and Liere (1978), and later revised (Dunlap, Van Liere, Mertig, & Jones, 2000), the NEP sought to quantify individuals environmental attitudes. This allows for the ability to compare perceptions between different populations and also to determine the influence of environmental attitudes in other behaviours of individuals. A few studies have investigated the influence of environmental values, using the NEP, on tourist behaviour (Kim, Borges, & Chon, 2006; Lück, 2003; Luo & Deng, 2007; Uysal, Jurowski, Noe, & McDonald, 1994). The results have varied significantly. Some have argued that the NEP does influence consumer behaviour. In the case of nature-based tourists to a Chinese national park, Luo and Deng (2007) found that visitors with higher environmental values were more likely to be motivated by environmental factors. However, Kim, Borges, and Chon (2006) did not find that overall environmental values influenced the motivations of attendees of an ecotourism film festival in Brazil. Is therefore necessary to continue research efforts in this area to determine the ways in which environmental values influence behaviour in the tourism context.

The majority of research which has addressed environmental attitudes and behaviours within the tourism context has focused on the clients, or tourists (Chiu, Lee, & Chen, 2014; Serenari, Leung, Attarian, & Franck, 2012). Only a handful of studies have examined the perceptions and behaviours of other tourism stakeholders towards the environment and most have been within the ecotourism context and focused on western perceptions (Imran, Alam, & Beaumont, 2014; Littlefair & Buckley, 2008; Peake, Innes, & Dyer, 2009; Weiler & Davis, 1993). Although the values, and particularly the behaviours of tourists are important in environmental management strategies, tourism operators, and more specifically adventure tourism guides, have significant influence over the impacts caused by the activity. Furthermore, studies which have examined the perceptions and behaviours of guides towards the environment have found that tour guides' behaviour not only has implications for overall environmental management but has the ability to influence the behaviour of the tourists as well (Peake et al., 2009; Weiler & Davis, 1993). It is, therefore, important to understand the beliefs and behaviours of guides to ensure effect environmental management techniques be implemented in the context of nature-based tourism.

In the South African context, a few studies have examined the efforts taken by tourism operators to mitigate environmental impacts. The majority of this research has focused on the implementation of environmental mitigation strategies in the hotel industry. J. Rogerson (2012) conducted an investigation of the greening of urban hotels in Gauteng, situating the discussion in the global context. The results show that the greening of individual hotels is relatively limited when compared with international efforts, primarily due to a lack of government incentive, regulation and standardization. In addition, the consumer market does not appear to be influenced by the increase in greening efforts made by hotels. However, a more recent study by Ismail and Rogerson (2016) found that some efforts are being made by major hotel chains to upgrade structures to include some environmentally friendly components. The most common were the use of LED lightbulbs and implanting recycling programs. This demonstrates that some efforts are being made to mitigate environmental impacts caused by the hotel industry. A great deal of additional research, however, is needed to determine environmental awareness and mitigation efforts made in other tourism sectors.

Methodology

The theoretical framework that guides this research is that of human-environment interaction (Dann, 1977). As part of a larger study on the influence of human-environment interaction on adventure tourism behaviour, this study seeks to address the ways in which operators perceive the environment, their behaviour towards the environment and the measure implemented by adventure tourism operators to mitigate environmental impacts caused by the activity.

The empirical results included in this study used a mixed-method approach to research, implementing both quantitative and qualitative strategies. Qualitative techniques were included due to the exploratory nature of the study, and to be able to extract the range of initiatives taken by the various operations to minimize environmental impacts caused by the activity. This allowed for the ability to delve into the perceptions of operators as to their responsibility to the environment. Quantitative techniques were also used, to assess the environmental values and behaviours of adventure tourism guides. This was found to be appropriate to allow comparison with previous studies as well as the ability to examine trends across the data set and to directly compare the findings between different types of activities included in this study.

Qualitative techniques included in-depth interviews with the top staff members of the adventure activity operators such as the founders, owners or general managers. This was done to obtain more detailed information about the structure of the company in terms of its relationship with the environment. Environmental practices and marketing were also examined in this section of the research. Understanding the role of the environment in terms of organization of the operation and establishment are significant aspects assessed in the interviews. One key purpose of the interviews is information on the operations efforts to minimize environmental damage and the role the natural environment plays in the viability of the operation. Semi-structured interview questions were developed before the interview process and were generally consistent between companies (Miles and Huberman, 1994). This allowed for some standardization with room for changes, response questions, and additional information.

Quantitative data was obtained using a questionnaire. Both simple fixed-response questions and those using Likert scales were included. The first section covered the environmental values of guides. This was done using a revised version of the New Environmental Paradigm Scale, one of the most widely used assessments of environmental values (Dunlap et al., 2000). This scale uses a list of statements with 5-point Likert scale responses to determine a person's environmental values. The statements are designed to show a pro-environment (NEP) stance or pro-social dominance (DSP) based on level of agreement with a given statement, the latter indicating a 'man over nature' perspective. There are fifteen statements in all, eight of which are pro-NEP and seven of which are pro-DSP (Dunlap et al., 2000). Pro-DSP statements are reverse scored in order to calculate a mean NEP score which is used to determine an individual's overall environmental values. The NEP includes five different categories to assess different aspects of environmental values. They are: reality of limits to growth, anti-anthropocentrism, fragility of nature's balance, rejection of exceptionalism, and the possibility of an eco-crisis (Dunlap et al., 2000, p. 432). Each of the 15 statements used in the scale fits into one of these categories. Therefore, in addition to the discussion and calculation of overall environmental values, using mean NEP scores, NEP results are also discussed with respect to specific types of environmental awareness.

The questionnaire also included items to elicit environmental behaviours practiced by guides while at work using fixed-response questions. This was done by listing a number of standard practices that indicate pro-environment behaviours and initiatives that individuals are able to take that help protect the environment or minimise environmental damage in the context of a tourism operation (Imran et al., 2014). The guides were asked to indicate all the initiatives that they take to conserve the environment. The items used in this section of the questionnaire were determined through participant observation. This included site visits to all companies and participation in all activities. By observing operations and the researcher was able to examine the environmental initiatives that were possible for guides to take given the circumstances (DeWalt & DeWalt, 2010).

Data Collection and Analysis

Data was collected from guides and owners/managers of five different commercial adventure tourism operations in the Tsitsikamma, Eastern Cape, South Africa. The Tsitsikamma was found to be an appropriate place to conduct this kind of research due to the number of adventure tourism operations found in this location, the unique and fragile environments found there, and its status as a key tourism destination. The companies were chosen based on their location in the Tsitsikamma and were required to be organized, guided, commercial adventure tourism operations. A total number of six commercial adventure tourism operators were found in the area. All were approached for participation in the study, of which five were willing to participate. The five companies included covered three different types of activities. The first was bungee jumping, run by a single operator (hereto referred to as *Bungee Jump*). The second is blackwater tubing, which is conducted by two different operators on the same river, the Storms River (*Tubing 1* and *Tubing 2*). The third activity is a form of ziplining, which includes two different companies that operate similar activities in different locations and in different settings. The first, called *Zipline 1*, operates in the Tsitsikamma National Park and takes visitors through the forest. The second, *Zipline 2*, operates on private land and takes visitors over cliff and waterfalls.

Interviews were conducted by the researcher with one owner or manager of each operation in person, at their offices. The interviews were semi-structured to allow for some continuity between reports. Analysis for the interviews was conducted using a continuous process of interpretation. All interviews were recorded and transcribed by the researcher. In addition, notes were made during and post-interviews by the researcher. The in-depth analysis was done using guidelines drawn out by Miles and Huberman (1994). The interview questions were structured around the outlined objectives and therefore responses were categorized accordingly. The information was first carefully examined to draw out additional themes or categories into which responses of the operators are grouped. Finally conclusions were drawn and patterns identified by comparing responses from all the interviews (Miles and Huberman 1994). This gives insightful information as to the practices and perceptions of the operators and details about the role they believe the environment plays in their operation. It also examines how the operators work to protect and/or sustain the natural environment. All company names have been removed and only initials of interviewees included to protect anonymity as best possible. In order to compare the initiatives taken by different companies, the researcher extracted theme discussed in terms of environmental initiatives which were quantified and tabulated. Ratings were given for each theme of environmental initiatives of 1 (weak), 2 (moderate), or 3 (strong). The categories were developed by assessing the comprehensiveness of the responses from the interviews. The purpose of these ratings is to differentiate the initiatives taken by the different companies and, by comparing the overall scores, where companies lie on the spectrum of environmental practices. This format allows a simple comparison of the initiatives taken by the different companies.

The questionnaires were distributed to all guides present at the time of data collection. Questionnaires were self-administered, which was deemed the most appropriate due to the use of Likert scales. The research was present during the completion of all questionnaires and therefore able to clarify any confusing material. The companies varied quite significantly in size and therefore there are significance discrepancies in the number of questionnaires collected from each. Convenience sampling methods were employed, though efforts were made by the researcher to obtain data from all guides associated with a given activity. A total of 55 questionnaires were distributed over the five companies, 42 of which were usable and therefore included in analysis, with a response rate of 76%. The total responses by company are: Bungee

Jump (n = 21), Tubing 1 (n = 2), Tubing 2 (n = 4), Zipline 1 (n = 8), Zipline 2 (n = 7). Results from the NEP, which included Likert scale data, were assessed for central tendency, using the mean and standard deviation (Aron, Aron & Coups). The remaining items, which included nominal data, were analyzed using simple counts and percentages. Differences in responses between the companies were also extracted.

Results and Discussion

The results presented below cover four primary aspects of the ways in which adventure tourism companies perceive and operate within the natural environment in which their activities occur. It begins by detailing the perceptions of company owners/managers of their role in the environment and the ways in which they minimize environmental impacts caused by the activity. This also works to provide a context by which the remaining information can be interpreted. The discussion then goes into an analysis of quantitative data that assess the environment values and behaviours of adventure tourism guides.

Environmental Initiatives of Adventure Tourism Companies

The initiatives of adventure tourism operators focus on measures taken to protect the environment as a whole as well as the area in which the activities take place. Since the initiatives and context of the activities vary between companies, the discussion will examine responses from each activity individually and is not seen as a generalization of the industry as whole. The discussion of initiatives is based on interviews with the owners or managers of the companies. Interviews were semi-structured so that certain themes could be extracted and tabulated, shown in Table 1. This table is followed by an in-depth discussion of the results contextualized with information obtained from the interviews for each company and observations made by the researcher when visiting the operation and participating in activities.

Table 1. Categories of environmental initiatives taken by adventure tourism companies.

	Bungee Jump	Zipline 1	Zipline 2	Tubing 1	Tubing 2
Environmental Philosophy	1	3	2	3	2
Environmental Education	1	3	1	1	1
Environmental Mitigations	1	3	1	3	3
Environmental Responsibility	2	3	2	2	2
Total	5	12	7	9	8

As demonstrated in the table, the company with the strongest environmental initiatives is Zipline 1. They project environmentalism in both theory and practice. Tubing 1 and Tubing 2 also had relatively strong environmental initiatives, particularly in the implementation of mitigation efforts. The Bungee Jump had, by far, the lowest score for environmental initiatives, with little sense of environmental philosophy and almost no mitigation efforts implemented. The specific measures taken by the companies are elaborated on in the sections below and provide additional insight into the philosophy of each company with respect to the environment, as well as their efforts to mitigate environmental impacts caused by tourism operations.

Bungee Jump

The two managers of the bungee jump asserted that the company is very concerned with environmental issues, but they felt that some considerations should be noted when assessing environmental mitigation techniques. First, they are tenants on the property, and therefore, did not have control over the facilities such as buildings and management systems. Thus, the physical facilities are not necessarily environmentally-friendly. From observations it is clear that they do not utilize any sort of recycling or waste-water system and do not seem to make an effort to minimize the use of resources. The company asserts that it has no control of the infrastructure because this is the responsibility of the owners of the property. Therefore, the company itself does little to mitigate damage related to the building of structures, use of resources and disposal of waste. Secondly, the bridge, from which the activity operates, had already been erected and, therefore, the activity was simply using an existing structure. In fact, the only structure that was added by the company was an access-way to the bridge. The company does adhere to the stipulations of the National Park and emphasized their responsibility by means of the popular slogan, "Only take photos and leave footprints. Nothing more." This is, however, a minimal approach in terms of mitigating environmental damage, and does not consider factors other than the construction of physical structures in the implementation of environmental initiatives. The company feels that they have little to no impact on the environment and the implementation of anything that might minimize damage is out of their control.

Zipline 1

A major part of the mission of *Zipline 1* is environmental protection, conservation and education, particularly within the local community. When asked what initiatives the company takes to protect the environment, W., the owner and founder stated; "first and foremost education", and adding that "education is the fundamental starting point." This was particularly emphasized with regards to staff training. All staff members were educated on preserving the natural heritage, pointing to the resultant benefits that accrue to the community as a result of the message. W. also noted that the knowledge provided to his staff needs to be passed on to other members of the local community. Thus, the staff becomes "ambassadors" of good practice, and this has the potential to spread throughout the community. The use of education as an environmental mitigation technique is valid and has significant value.

The company has *Green Line* and *Fair Trade in Tourism* accreditations, entities which accredit tourism companies that address environmental and socio-economic issues. Other environmental measures taken by the company are extensive. They use biodegradable soap and an environmentally-friendly wash bay in which water is caught in a sand trap. The company has installed a bio-waste grey water system which ensures that grey water does not seep into and pollute the forest. They have also implemented various energy-saving initiatives such as: switching off lights when they are not needed; curtailing diesel spills and installing containment structures around their tanks to prevent spills; recycling; and composting.

Another important aspect of the company is its approach to the building of the ziplines themselves. According to W., all the structures that have been built in the forest, the platforms around the trees, for example, are completely removable and non-permanent. He stated; "There is not a nail or screw that goes into the trees," and further mentioned the use of rubber pads to protect the trees. In a discussion of the removable nature of the structure W. indicated that; "We work on the premise that should you remove that system within two years you would not notice that it had been there." Other aspects mentioned by W., include the fact that the use of the trees for adventure tourism had already generated at least 10 times the revenue than the value of the trees as timber, and that "for every rand of turn over that we generate, one rand goes back, directly or indirectly, into the community, the environment, and socio-economic upliftment."

Overall Zipline 1 has a very strong sense of environmental stewardship and the company operates on the premise that they are doing all they can to help protect the environment and educate both the community and visitors about its importance. There is the recognition that there is no way to completely prevent all environmental impact as a result of the ziplines and the associated foot traffic. The company does, however, provide a detailed model by which impacts can be minimized.

Zipline 2

Manager of Zipline 2, S., emphasized their commitment to removing invasive species and replacing them with native species as a key environmental initiative taken by the company. This is well demonstrated by the project they have established on their property in which they have planted 3,000 yellowwood trees. When asked about their responsibility to environment, S. stated that they try to prevent damage to the environment as much as possible, because the activity would not be viable without the beauty of the natural environment. Therefore, there is a sense that it is important to preserve that beauty and ensure that the features that attract visitors are protected. Aside from planting and protecting indigenous flora, the company also ensures that all litter is picked up and properly disposed of. However, it should be noted that, from observation, there are no recycling facilities available on the property. As opposed to Zipline 1, which prides itself on the fact that all zipline structures are removable, Zipline 2 has installed permanent structures from which the ziplines are operated. The environment has been somewhat altered in order to accommodate the infrastructure necessary for the ziplines. For this reason, there has been some impact on the environment as a result of this instillation.

Tubing 1

The owner and founder, B., of Tubing 1, discussed the company's commitment to the environment. Part of his motivation in starting the company was to help visitors "get back in touch with nature". In terms of actual initiatives, the following aspects are practiced: composting, recycling and the use of energy-saving LED light bulbs. In addition, they have made use of waste materials in the building of their accommodation facilities. The company has also invested in general environmental outreach such as a frog-breeding habitat has been established on the property, the removal alien and invasive species, and the removal of snare traps from the forests to protect wildlife. B. noted that environmental commitment extends to the actual rafting activity as well. All litter and waste is removed and properly disposed of by clients and guides, according to B., as is any additional litter or waste that is found during the trip. The importance of environmental education was also mentioned. At the tourism centre the company operates in the town centre, environmental-awareness media is played. Furthermore, an "awareness hour" has been established at the accommodation facilities in which various videos about environmental issues are played. B. stated that the company is prepared to take any measure to

protect the environment. However, upon personal observation, environmental education tactics were not apparent during that activity or at the accommodation facilities.

When asked what he believes the company's responsibility is to the environment in which it operates, B. believes that the company has a responsibility to "protect the environment from any possible external influence on the sensitive ecosystem and preserve it as much as possible." He believes that the company should minimize changes to the environment in the context of the activity and that anyone involved in the activity should not litter and should extract additional litter and alien species found along the river. B. also believes that it is not only important to minimize damage but also to try and reverse damage that has already been done. According to the information obtained in the interview, the company does have a strong sense of environmental stewardship, though this did not appear to follow through during the course of the activity. Very little focus was given on the natural environment during activity participation.

Tubing 2

In the case of *Tubing 2*, aside from ensuring litter is picked up during the activity, the backpacker lodge has developed a recycling and composting program. The company also implemented a grey water system in which grey water is deposited into a separate septic tank. They minimize electricity use by using low consumptive loads (i.e. low energy light bulbs and electronics). In terms of the company's responsibility to the environment they try to remove alien species whenever possible and pick up litter. Owner and founder, M. also emphasized the importance of educating visitors about the environment and that part of the experience of the activity is education. Although it did not emerge as strongly in the interview, observations demonstrated that *Tubing 2* runs a fairly environmentally friendly establishment. However, as was the case with *Tubing 1*, the focus on environmentally-oriented behaviour was not very apparent during activity participation.

Environmental Values of Guides using the NEP Scale

As discussed in the section above, the NEP assessment was done by asking respondents their level of agreement with fifteen statements using a 5-point Likert-type scale. An average of all the scored responses is calculated in order to determine where respondents fall on the NEP scale. The boundary between pro-NEP and pro-DSP is widely accepted as 3, with higher scores indicating the former and lower scores indicating the latter (Hawcroft & Milfont, 2010). First, an overall mean of the responses is discussed and then a breakdown of the different environmental themes addressed in the NEP is discussed.

The compiled data resulted in an overall mean of 3.35, which shows endorsement of the NEP. From the data collected in this study, it seems that employees in adventure tourism in the Tsitsikamma do have some sense of responsibility towards the environment. In addition, when the data is disaggregated by company, all were found to have means over 3, as seen in Table 2, demonstrating endorsement of the NEP across the range of activities. The results from the Bungee Jump showed a mean of 3.18, which was the lowest overall, though still leans slightly towards the pro-NEP end of the spectrum. The mean for the Zipline 1 was 3.27, slightly higher though interestingly not extraordinarily so. The reason this is interesting is because, as discussed above, there are significant discrepancies between the environmental initiatives taken by these two operations. Furthermore, although the mean for Zipline 2, 3.22, is in fact lower than the score for Zipline 1, it is only marginally so which is interesting in relation to how the operations are run and the values the different companies promote.

Table 2. Environmental values of adventure tour guides (mean NEP).

	Mean	Std. Deviation
Bungee Jump N = 20	3.18	0.22
Tubing 1 N = 2	3.54	0.86
Zipline 1 N = 8	3.27	0.41
Zipline 2 N = 7	3.22	0.28
Tubing 2 N = 4	3.57	0.62
Total N = 41	3.36	0.36

Tubing 1 guides averaged at 3.54, which is relatively high when compared with other activities, though it should be noted that this sample only consists of two respondents. However, the highest NEP mean score was found for employees of Tubing 2 with 3.57. It is interesting that the environmental values of guides do not necessarily correspond to the ratings given for environmental initiatives. Tubing 2, which was found to have the highest mean, was only rated 3 out of the five companies in terms of environmental initiatives. This indicates that the environmental perceptions and mitigation techniques of owners/managers do not necessarily translate to the adventure guides.

Although all companies were found to have a mean which indicated endorsement of the NEP among their guides, the means found here were relatively low when compared with those found among tourists. For example, the results of a study by Luo and Deng (2007) of visitors to a Chinese national park was 3.81, significantly higher than the results found here. Kim et al. (2006) found a higher mean than was demonstrated in these results, with that of 3.59 among ecotourism festival attendees. Hawcroft and Milfont (2010), who reviewed 139 studies which have used the NEP on a variety of populations, only cited six studies which found mean NEP scores lower than that found here (i.e. lower than 3.35), most of which were relatively old. The novel context of guides in a developing country such as South Africa, is crucial to understanding this score and demonstrates the need for increased research assessing the environmental values using the NEP of different populations in developing countries.

The specific types of concern demonstrated by guides, using the different NEP dimensions, is shown in Table 3. The results show that, overall, guides seem to have the most pro-environmental values in terms of *Anti-Anthropocentrism* and the *Fragility of Nature's Balance*. On the other hand, higher levels of social dominance perceptions were found in terms of the

Reality of the Limits to Growth and the *Rejection of Exceptionalism*. The lean towards pro-DSP in the latter two categories indicates that the guides see the earth as having unlimited resources and that the human race can continue to grow at the current pace without consequences. It demonstrates a belief that human innovation that allows for the skills to continue to make the world liveable despite the major changes the earth is undergoing (predominately caused by humans).

Within these dimensions some differences in responses between the statements were also found. In terms of the *Reality of the Limits to Growth*, participants showed very strong pro-DSP values regarding the concept that human innovation will ensure access to the earth's resources. Interestingly, however, respondents showed reasonably strong pro-NEP values in terms of the statement that earth has a limited amount of space and resources. These guides seem to acknowledge that resources are limited but they believe that humans will be able to tap into unknown resources through innovation. When examining the responses of statements associated with the *Rejection of Exceptionalism*, respondents scored low on the statements that once again refer to human innovation; the idea that human resourcefulness will always make the earth liveable and that eventually humans will learn enough about nature to control it. They scored very high, with strong pro-NEP endorsement on the statement that refers to the fact that despite our special skills, humans are still subject to the law of nature. This, once again, indicates a regard for the power of natural forces though implies faith in humanity to overcome any obstacles provided by nature.

Table 3. Means, standard deviation and factor means for NEP statements and dimensions.

NEP Dimensions	Mean	Standard Dev.	Factor Mean
Reality of Limits to Growth			2.93
<i>We are approaching the limit of the number of people the Earth can support.</i>	3.46	1.00	
<i>The Earth has plenty of natural resources if we just learn how to develop them. (Reverse scored)</i>	1.67	0.58	
<i>The Earth is like a spaceship with very limited room and resources.</i>	3.65	0.74	
Anti-anthropocentrism			3.66
<i>Humans were meant to exercise control over the rest of nature. – negative</i>	3.32	1.38	
<i>Plants and animals should have similar rights to those of humans.</i>	4.56	0.72	
<i>Humans have the right to modify the natural environment to suit their needs. – negative</i>	3.10	1.17	
Fragility of nature's balance			3.45
<i>The balance of nature is very delicate and easily upset.</i>	3.79	0.96	
<i>Nature is strong enough to cope with the impacts of modern industrial nations. - negative</i>	2.90	1.05	

<i>When humans interfere with nature it often produces disastrous consequences</i>	3.65	0.89	
Rejection of exceptionalism			2.88
<i>Humans will eventually learn enough about how nature to manipulate it. (Reverse scored)</i>	2.42	1.03	
<i>Despite our special abilities, humans are still subject to the laws of nature.</i>	3.71	0.78	
<i>Human ingenuity will ensure that we do not make the Earth unlivable. (Reverse scored)</i>	2.53	1.09	
Possibility of an eco-crisis			3.37
<i>Humans are seriously abusing the environment</i>	3.45	0.76	
<i>The so-called “ecological crisis” facing humankind has been greatly exaggerated (Reverse scored)</i>	2.75	0.95	
<i>If impacts on the environment continue, we will soon experience a major ecological disaster.</i>	3.90	0.78	

Although the mean of statements referring to the possibility of an eco-crisis was moderate, the results for some statements are noteworthy. The results were quite low, with a pro-DPS stance, for the statement that implies that discussions of the impending “eco-crisis” has been greatly exaggerated. Respondents seem to believe the effects of the eco-crisis are overemphasized. On the other end of the spectrum, guides seem show strong pro-NEP values in terms of the idea that humans are seriously abusing the environment. These two results are quite interesting because there does seem to be recognition that humans are impacting the environment in a negative way, but respondents do not seem to associate these impacts with the ideas of an “ecological crisis” or see it as problematic.

Environmental Behaviours of Guides

The environmental behaviours of guides during work were determined through a question asking which initiatives they take, personally, in order to minimize impacts on the environment caused by the activity. Only 4% of respondents did not identify any behaviours taken to minimize environmental impacts, which demonstrates that the vast majority seem to partake in some environmental behaviours. The most common behaviours of guides to protect the environment was ensuring visitors behave properly towards the environment and throwing out litter. These are fairly simple behaviours, particularly the latter which ensures a presentable establishment as well as a pleasant workspace. Another significant behaviour is educating visitors about the environment, which is important as a means of mitigation as it increases the likelihood that visitors will also demonstrate environmentally conscious behaviour.

The results, when disaggregated by company, show some variation in behaviours. This could be related to both individual behaviours and the expected behaviours or availability of facilities at the company itself. The results for the Bungee Jump show that the most common behaviour by guides to help protect the environment is making sure that litter is thrown out. Other common behaviours were ensuring that visitors behave properly towards the environment and recycling.

The latter is puzzling as there were no apparent recycling facilities on the premises. Very few said that they try to minimize physical damage to the environment or educate visitors about the environment.

Table 4. Environmental behaviours of adventure tourism guides.

	Bungee Jump	Zipline 1	Zipline 2	Tubing 1	Tubing 2	Total
<i>Ensuring visitors behave properly towards the environment</i>	24%	63%	57%	50%	25%	38%
<i>Minimizing damage to the environment</i>	14%	0%	43%	0%	50%	19%
<i>Educating visitors</i>	10%	75%	14%	50%	50%	29%
<i>Throwing out litter</i>	52%	25%	0%	50%	50%	38%
<i>Recycling</i>	24%	13%	29%	50%	0%	21%

The results from Zipline 1 are actually noteworthy, particularly when considering the environmental initiatives taken by the company as well as their philosophy towards the environment. The most common behaviour of employees was educating visitors about the environment, which follows through with the outlined initiatives of company in which environmental education is given top priority. This seems to reflect in the employees, the majority of whom see it as a significant aspect of their job. Another popular behaviour amongst this group of guides was to ensure that visitors behave properly towards the environment. Surprisingly only a very small portion of guides mentioned recycling as a behaviour they engaged in. This is surprising since recycling facilities are readily available on the premises. None of the respondents stated that they try to minimize physical damage to the environment, again notable, as this is a behaviour which is also emphasized by the company.

The results from Zipline 2 show that the most common behaviours by employees to help protect the environment was ensuring that visitors behave properly towards the environment and minimizing physical damage to the environment. The latter is notable as it was not selected by a significant number of respondents from any of the other companies. Other behaviours listed by employees of this company are recycling and educating visitors about the environment. The former, again, is surprising as this company does not seem to have any obvious recycling facilities. In comparison with the results from Zipline 1, there is a very significant difference in the responses of these employees for the behaviour of education emulates differences found in the initiatives and missions portrayed by the owners.

The results for Tubing 1, as discussed above, should be approached with caution since only two employees completed questionnaires. The company is, however, relatively small, so this is actually a substantial portion of the staff. Guides noted taking the following behaviours: ensuring visitors behave properly towards the environment, educating visitors about the environment, making sure litter is thrown out and recycling. None stated that they work to

minimize physical damage to the environment. A number of behaviours do appear to be taken by guides which is reflexive of the environmental initiatives of the company discussed above.

The most common behaviours in terms of environmental protection among Tubing 2 guides were found to be minimizing physical damage to the environment, educating visitors about the environment and making sure litter is thrown out which were each selected by 50% of respondents. A few stated that they ensure that visitors behave properly towards the environment. None of the respondents cited recycling as a behaviour which is, again, surprising since the company has extensive and accessible recycling facilities on the premises. Overall, a number of initiatives are taken by adventure guides across the range of activities. There does, however, seem to be some variation in the behaviours of employees towards the environment between different companies, though they are not easily associated with the initiatives and perceptions of the company as a whole. There are many reasons why these variations could exist. A few are the relationship between the operation and the environment as well as the foundations and perceptions of owners and the training provided by the company.

Conclusion

The importance of the environment in the sustainability of the adventure tourism industry has been continuously stressed in literature (Buckley, 2010; Giddy, 2015; Swarbrooke et al., 2003; Williams & Soutar, 2005). However, research on the perspectives of adventure tourism operators is lacking. This study begins to provide some insight into the perceptions and behaviours of adventure tourism operators towards the environment. The results show that in the Tsitsikamma, all company owners/manager have some sense of environmental awareness and nearly all take some initiative to help minimize the impact of the activity on the environment. However, the number and enforcement of initiatives varies significantly between different companies. The assessment of environmental values of guides shows that although the majority do endorse the NEP, and therefore demonstrate pro-environmental values, when compared with other studies assessing environmental values, the ones demonstrated here are relatively low. Nevertheless, this group of adventure guides does appear to engage in a number of environmental behaviours. Although the number and type vary, nearly all respondents make some effort to minimize the impact of the adventure activity on the environment.

These results provide a great deal of important information which can be utilized, not only by researchers, but more importantly by other adventure tourism operators as well as for purposes of policy and planning. With the continuous development of adventure tourism, particularly in South Africa, it is important that initiatives be taken by companies in order to ensure the environmental damage caused by operations is minimized. Furthermore, attention should be given to the environmental knowledge and behaviours of adventure guides, who play such an important role in daily operations, as well as influence the perceptions and behaviours of the tourists themselves.

A great deal of additional research, however, is needed in this field. This study represents only a few operations in a single destination. Although it provides an initial overview of some of the ways in which adventure operators perceive and act within the environment, it must be repeated and expanded in order to develop a more clear understanding of these phenomena. This includes expansion of this type of research into other tourism sectors within South Africa, and also investigate the perspectives of adventure tourism operators towards the environment in other regions. With the wide ranging use of the NEP to assess environmental values, it is especially important to continue with research to determine whether the relatively low

environmental values demonstrated here is a result of the context, in an African country, or the population, that of adventure guides. Therefore, it would be particularly useful to assess the environmental values of adventure guides in other countries as well as the environmental values of other populations in South Africa. Furthermore, as mentioned earlier, a great deal of additional research is needed on the environmental initiatives taken by tourism companies to minimize environmental impacts. This has important policy and planning implications and is necessary to ensure that South Africa continue to thrive as a competitive tourism destination.

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