



Murdoch
UNIVERSITY

MURDOCH RESEARCH REPOSITORY

<http://researchrepository.murdoch.edu.au/1777/>

This is the author's final version of the work, as accepted for publication following peer review but without the publisher's layout or pagination.

Hughes, M. and Morrison-Saunders, A. (2003) *Visitor attitudes toward a modified natural attraction. Society and Natural Resources* , 16 (3). pp. 191-203.

Copyright © Taylor & Francis.

It is posted here for your personal use. No further distribution is permitted.

VISITOR ATTITUDES TO A MODIFIED NATURAL ATTRACTION.

Introduction

Ecotourism, in the context of nature based activities, refers to tourism in relatively undisturbed natural areas (Chirgwin and Hughes 1997; Hvenegaard and Dearden 1998; Orams 1995). The minimally disturbed natural setting with few visitors is generally considered a requirement for a true ecotourism experience of nature while areas of a relatively degraded, developed or crowded character were perceived not to offer a 'true' experience (Clarke 1997; McKercher 1996). Defining ecotourism in these terms excludes the perceptions and attitudes tourists bring to a natural area site and the impact this may have on their experience (Chirgwin and Hughes 1997). It also makes for an increasingly difficult challenge for tour operators to provide ecotourism experiences of isolated pristine wildernesses owing to the ever-growing popularity of ecotourism world-wide (Burton 1998). This paper examines visitor attitudes to a popular tourism site in a modified natural setting.

It is of interest Chirgwin & Hughes (1997) found, in a study of a tourism attraction consisting of an artificially created wetland, that visitors considered they had experienced the benefits of a natural wetland area despite the contrived nature of the attraction. Chirgwin & Hughes (1997) concluded that tourists considered what was a modified site to have provided a fulfilling experience of nature due to the aesthetically pleasing environment. This study appears to lend support to the concept that visitors bring their own independent meaning to a particular location (Rolston 1998). This also relates to the concept that beneficial experiences are the core product of any tourism destination and these are, in turn, determined to a large extent by the attitudes and perceptions of the tourists themselves (Prentice, Witt, and Hamer 1998). This is an important consideration both in terms of the scope available for the provision of ecotourism experiences as well as the potential associated benefits in terms of influencing attitudes toward the natural environment.

There is some ambiguity surrounding attitudes as a concept for study (Dawes and Smith 1985; Howard 2000). Manning *et al.* (1999) defined the term attitude as, “measures of how people feel about issues”. Howard (2000) cites a similar definition stating that attitudes are evaluations of objects along a continuum ranging from negative to positive. Dawes & Smith (1985) suggest that a precise definition is impossible as it depends on the social, environmental and cultural context within which attitudes are being defined or measured. That is, the environmental context and specific issues within which attitudes are measured are of prime importance when attempting to derive practical meaning from such research (Crick-Furman and Prentice 2000). McGuire (1985) comments that hundreds of operational definitions are available in the literature but describes a general definition of attitudes as ‘responses that relate specific thoughts to dimensions of judgment’. In this sense, a visitor’s attitude toward a particular natural area site will therefore depend on the conceptual framework of that visitor combined with the visitor’s experience of the site.

Attitudes toward a site in terms of whether or not it provides a fulfilling experience of nature are also influenced by prior experience in natural areas (McKercher 1996). Although an individual experienced with concepts of natural ecology may consider developed sites to be superficial, all individuals may not necessarily hold the same view given the evidence of Chirgwin & Hughes (1997). Rolston (1998) argues that “impressive wildness” resides even in the most disturbed or developed forest and can create a sense of connection with nature traditionally sought after in remote wildernesses. On the other hand, it would seem that there is a point of balance between development and preserving the pristine state of a natural setting at which the maximum number of visitors gain some benefit through experiencing a natural attraction. This balance would seem to depend to a large extent on the perceptions of tourists visiting the site (Heimstra and McFarling 1974).

An extension of this concept relates to an accumulation of prior experience in natural areas generating greater awareness and appreciation of nature, as may be inferred from a study by Walker (1996). This study of workplace environmental education programs found that employees who were subjected to repeated environmental education programs were more sensitive to the environment than those who took part in a one-off program. The conclusion drawn was that environmental awareness and appreciation is nurtured and developed through constant reinforcement of experience. Parallel to this concept, Maslow (1968) described a process of psychological development involving an increasing complexity of personal fulfillment over time. According to Maslow, "...man's higher nature rests on man's lower nature ... The best way to develop this higher nature is to fulfill ... the lower nature first." (Maslow 1968 /p173). That is, satisfaction of lower psychological needs enables consideration of higher needs over time. Therefore, an accumulation of experience in nature, irrespective of the level of disturbance or development, may result in a greater sense of awareness and appreciation of natural settings. It follows that individuals who have visited natural areas on a frequent basis in the past will be more likely to gain fulfillment at a more complex level, during a particular site experience, than individuals who do not usually visit natural areas.

Understanding tourist attitudes and perceptions of natural area experiences was found to be highly effective in ensuring good practice in management both of the physical environment and tourist interaction with that environment (Heberlein 1989). Studies by Dowling (1993) and Ballantyne *et al.* (1998) also emphasized the importance of, among other things, understanding visitors' attitudes and beliefs in relation to tourism and the experience of natural area sites to aid in effective management. Such information may assist in guiding appropriate management of sites to maximize benefit to both the custodial organization as well as the tourist (Heberlein 1989; Manning, Valliere,

and Minter 1999). In this light, Prentice *et al.* (1998) comment that the most effective method of understanding visitor attitudes is to examine the experiential dimension of a tourism destination from the perspective of the tourist

This study sought to determine the extent to which a highly developed natural attraction provided a fulfilling experience of nature. This was investigated in the context of visitors with varying degrees of accumulated past visitations to natural areas. Both the methodology and results of this study may be of interest to eco-tour operators and natural area managers and researchers alike. The results seek to add to the body of knowledge presented in studies such as that of Chirgwin & Hughes (1997), which challenges the traditional view of what constitutes a beneficial ecotourism experience. The methodology expands on concepts presented in studies such as that of Manning *et al.* (1999) and Crick-Furman & Prentice (2000) who advocate the assessment of tourist attitudes using survey instruments tailored to the specific environment of concern.

The Valley of the Giants Tree Top Walk

The Valley of the Giants is a small area of forest dominated by Tingle and Karri trees within the Walpole-Nornalup National Park near the south coast of southwestern Australia. The giant Tingle trees are endemic to the southern coastal area of southwestern Australia (Winfield 1996). The unique characteristics of the Tingle Trees have traditionally provided the focus of attraction for local, interstate and international tourists.

Historically, visitation to the Valley of the Giants was largely uncontrolled and tourists were having a significant negative impact on the ecosystem. In addition to this, there had been no comprehensive surveys of visitor attitudes and perceptions during this period. The main site of visitation comprised of a large gravel car park with numerous 'goat tracks' forming a labyrinth in

the surrounding forest. The bark of the Tingle trees was being polished smooth through constant handling while the humus layer was being compacted, disturbed or removed (Winfield, 1996). A 1990 management plan emphasized the need for urgent protection from soil compaction and other negative impacts of high volume tourism. Construction of an elevated walkway (Tree Top Walk) and hardened pathways was subsequently proposed.

The Tree Top Walk (TTW) site was constructed in 1996 amongst a stand of giant Tingle and Karri trees close to the original degraded site. The centerpiece of the site is the TTW, a 600m walk through the canopy level of the Tingle forest. The TTW is a catwalk constructed from prefabricated metal bridge spans allowing a view of the forest from the canopy level. At its highest point, the visitor stands 40m above ground level (Winfield, 1996). A second trail is a 600m ground level walk of hardened pathways, stabilized earth and boardwalks. The overall design of the site restricts tourists to two walking loops, spread over a few hectares.

The boardwalks, catwalks and stabilized pathways, centered on a visitor orientation kiosk, were designed to allow large volumes of tourists with minimal effect on the physical quality of the site. Physical contact with the trees and other forest inhabitants is discouraged with the presence of barriers and small signs incorporated into the hardened walk trail design. These structures may be seen to be at odds with what might be expected of an ecotourism experience (McArthur and Hall 1993).

The TTW structure was designed to provide a highly confronting experience of the forest and is intended as the central interpretive tool in itself (Field & Gough, 1998). A minimal approach to signage was adopted, whereby general information is displayed at the visitor kiosk with little signage along the length of the walks. Additional information may be obtained on request. In the

words of Field and Gough (1998), the site is meant to be ‘so provocative that it enriches with out words’.

Method

Visitors were randomly surveyed at the TTW site over a two week period. Written surveys were conducted during the daily peak visitation period to the TTW site between 10am and 2pm. Visitors were requested to complete a survey prior to and immediately after experiencing the site. Unfortunately, there were no benchmark surveys carried out previous to the construction of the TTW to allow for comparative analysis of the impact of the structure on visitor attitudes to the site.

Each survey was comprised mainly of multiple-choice questions. The layout was based on past local natural area management visitor surveys while the content was derived from the work of Jurowski *et al.* (1995), Cole *et al.*(1997) and Manning *et al.* (1999). The survey sought to elicit data on tourists’ attitudes to their visit to the TTW site in the context of their average natural area visitation frequency during a calendar year. Respondents were requested to estimate their annual average number of visitations to natural areas by ticking one of a series of six categories. Respondents who indicated a natural area visitation frequency between 1 and greater than 12 are referred to as ‘natural area visitors’. This group was further divided into frequent and infrequent visitors where frequent visitors indicated a visitation rate greater than four times per year. Those who indicated no visitation of natural area by selecting the ‘none’ category are referred to as ‘group 0’. The survey also recorded data relating to visitor demographics such as: gender, age, place of residence and people accompanying the respondent on the visit. A summary of the questions posed in the survey is shown in Tables 1 and 2.

Table 1: Summary of Pre-experience Survey Questions.

- Can you indicate the main reason(s) for your visit?
- Have you visited the Valley of the Giants before?
- Have you visited the Tree Top Walk before?
- {Value placed on visit} Please indicate the extent to which the following statements apply to your visit to this site. (see table 3).
- During an average calendar year (January to February) how many separate trips from home would you take to visit national parks or other natural areas?

Table 2: Summary of Post-experience Survey Questions

- {Value placed on visit} Please indicate the extent to which the following statements apply to your visit to this site. (see table 3).
- What sources of information did you make use of at this site?
- What activities did you participate in at this site?
- Are there any suggestions you have for improvement of this site?

Visitor attitudes to the TTW site as a natural area destination in a forest setting were ascertained using a series of statements to which the participants responded on a five-point Likert scale (Table 3). Visitor responses were analyzed using one-way ANOVAs and Student's T-tests. The site value statements were included in both the pre and post experience survey.

Table 3: Statements of value of TTW site as a destination for the visitor (pre-experience survey).

Please indicate the extent to which the following statements apply to your visit to this site:					
	Strongly applies			Doesn't apply at all	
	1	2	3	4	5
a) Opportunity to enjoy the beauty of the forest.	1	2	3	4	5
b) Opportunity to participate in recreation in the forest.	1	2	3	4	5
c) Opportunity to learn more about the Tingle Forest.	1	2	3	4	5
d) Opportunity to see and experience nature as our ancestors did.	1	2	3	4	5
e) Opportunity to think creatively and be inspired by the forest.	1	2	3	4	5
f) Opportunity to exercise a moral obligation to respect and protect the Tingle forest.	1	2	3	4	5
g) Opportunity to see and experience the Tingle Forest enhanced by human made facilities.	1	2	3	4	5
h) Opportunity to maintain or regain physical or mental well-being through contact with the Tingle Forest.	1	2	3	4	5
i) Opportunity to obtain spiritual meaning through contact with nature.	1	2	3	4	5

The series of statements in Table 1 represent a set of attitudes to the forest environment adapted from Rolston (1998) and Manning *et al.* (1999). These attitudes toward the forest range from aesthetic and cognitive appreciation through to less tangible, higher order concepts relating to spiritual and emotional perceptions of well-being as described by Maslow (1968).

Surveying visitors' attitudes to a site experience immediately prior to and after experiencing a natural site affords opportunity to compare what is expected of the experience with perceived benefits gained from the experience. While motivation in terms of destination choice is a complex area of study, basic motivation theory relates to the intent to satisfy needs through action (Fodness 1994). The fact that tourists have chosen to visit a natural attraction in the form of a forest indicates some of those needs relate to the forest environment or the site specifically.

Results

A total of 212 visitors were surveyed over the two-week data collection period. Responses were analyzed using Student's paired T-tests. Statement labels accompanied by an asterisk indicate a significant change in the pre and post visit rankings (Figure 1). Rankings above 3 indicated the statement was relevant to the visitors' attitude toward the site while rankings below 3 indicated the statement as irrelevant. A ranking of 3 indicated a neutral response.

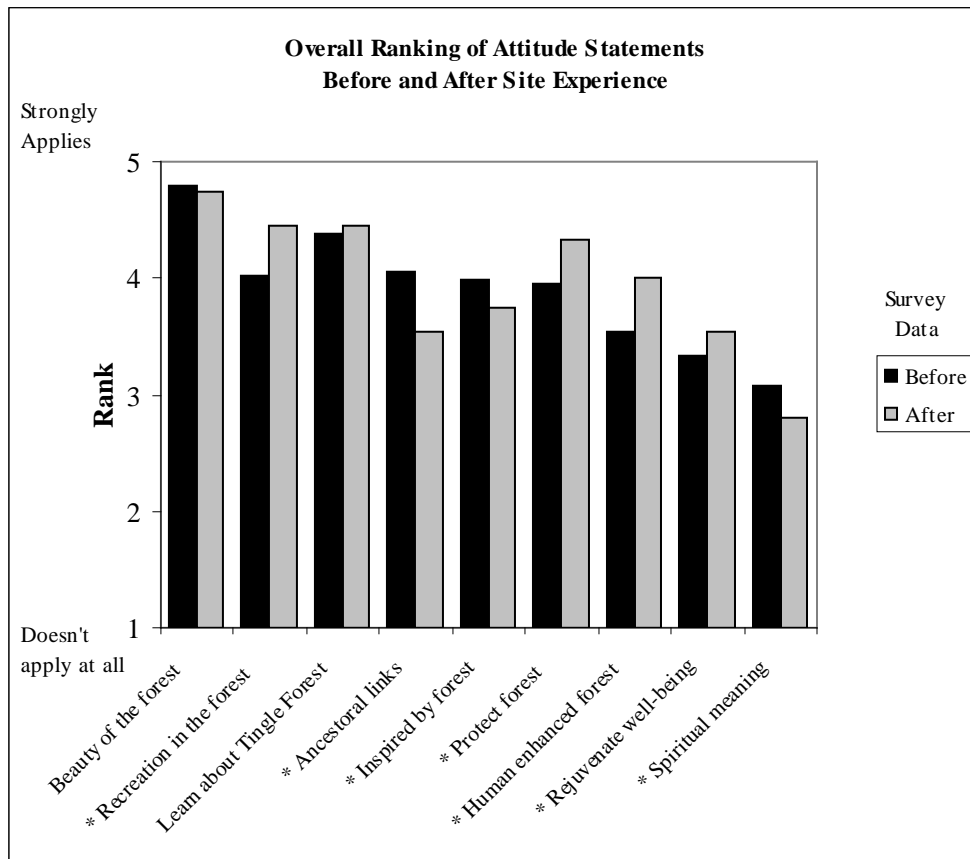


Figure 1: Overall response to attitude statements before and after experiencing the site.

When overall average pre experience responses to the attitude statements were compared with post experience responses, it was found that most were altered significantly ($P < 0.01$). The only two attitude statements that did not significantly change were ‘beauty of the forest’ and ‘learn about Tingle Forest’ which retained strongly positive responses. Statements ranked significantly lower after the experience were: ‘ancestral links’; ‘inspired by forest’ and ‘spiritual meaning’ ($P < 0.01$). The remaining altered statements: ‘recreation in the forest’; ‘protect forest’; human enhanced forest’ and ‘rejuvenate well-being’ were ranked significantly higher over all after the experience.

Natural Area Visitation

Frequency of natural area visitation was found to be a key component affecting visitor attitudes to the site as a natural area experience (see Figure 3). There was no significant relationship between the frequency of natural area visitation and other variables measured such as gender, age and place of residence.

Table 4 indicates the response to frequency of annual natural area visitation. Visitation rates of between 1-2 and 3-4 times per year were most common with equal proportions of respondents (21.7%). The number of visitors at the TTW site who indicated they did not usually visit natural areas at all formed a small proportion (8.0%). The overwhelming dominance of visitors belonging to the natural area visitation group had a strong influence on the overall results illustrated in Figure 1.

Table 4: Average annual natural area visitation frequency proportions as indicated by respondents.

Group		Annual Visitation Frequency	Number	Proportion
Group 0		none	17	8.0%
Natural Area visitors	Infrequent	1-2	46	21.7%
		3-4	46	21.7%
	Frequent	4-6	36	17.0%
		6-12	30	14.2%
		>12	37	17.4%
TOTAL			212	100%

Pre-experience Response

Figure 2 compares the attitude responses between natural area visitors and group 0 prior to experiencing the site. Statement labels accompanied by an asterisk indicate significantly different responses between the groups.

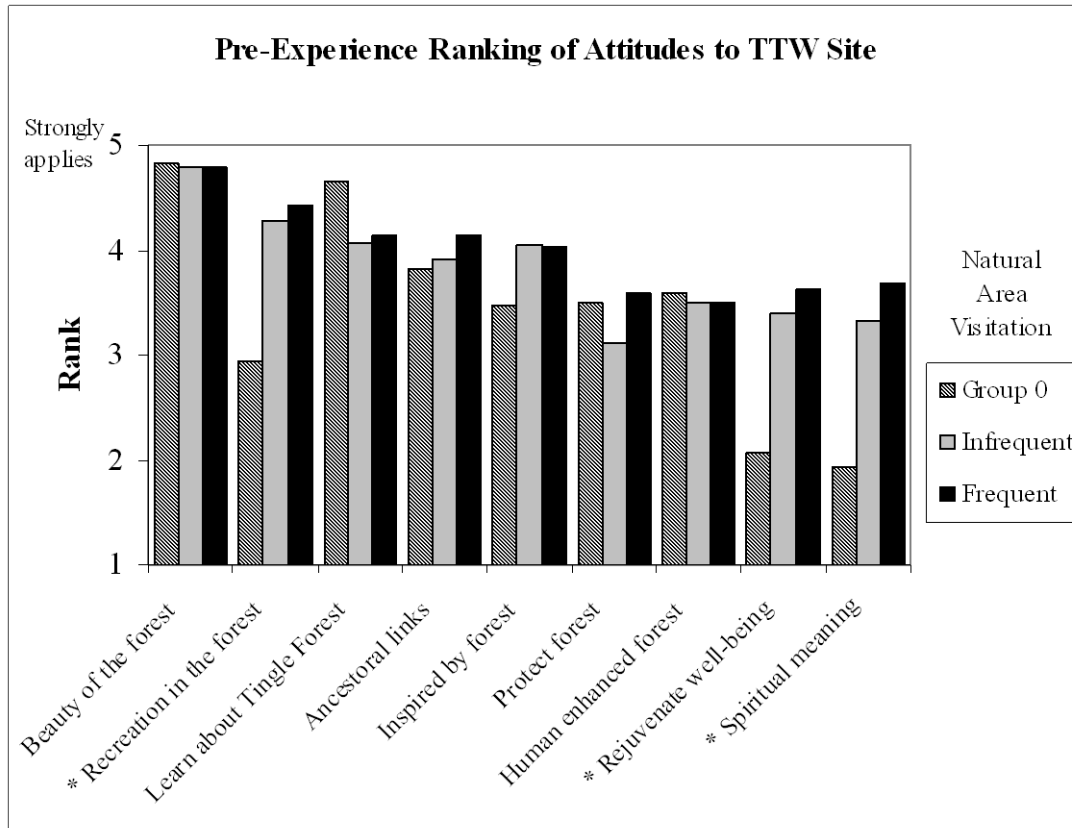


Figure 2: Attitude rankings of statements by natural area visitors and those who indicated no natural area visitation (group 0) before experiencing the site.

All groups ranked ‘beauty of the forest’ as most applicable while other aspects such as ‘rejuvenate well being’ and ‘spiritual meaning’ received lower rankings. However, natural area visitors ranked the statements: ‘rejuvenate well-being’ (F=5.84, p<0.01); ‘spiritual meaning’ (F=5.03, p<0.01) and

'recreation in the forest' ($F=4.56$, $p<0.01$) as significantly higher than did Group 0. Tukey's multiple comparisons test indicated a significant difference in response between the natural area visitation groups and Group 0 (mean diff.= 1.19, $p<0.01$) but no significant difference between the frequent and infrequent natural area visitation group responses. In all respective cases, 'recreation in the forest' was ranked significantly more applicable than 'spiritual meaning and 'rejuvenate well-being' ($F=25.65$, $p<0.01$).

Post-experience Response

After experiencing the site, all groups ranked 'beauty of the forest'; 'recreation in the forest'; 'learn about Tingle Forest' and 'protect the forest' as most applicable to the site experience. Paired T-tests indicated the only significant alterations by group 0, after experiencing the site, were an increased ranking of 'recreation in the forest' ($t=3.38$, $p<0.01$) and a decreased ranking of 'ancestral links' ($t=-2.51$, $p<0.05$). On the other hand, natural area visitors significantly changed a large proportion of their responses after their experience.

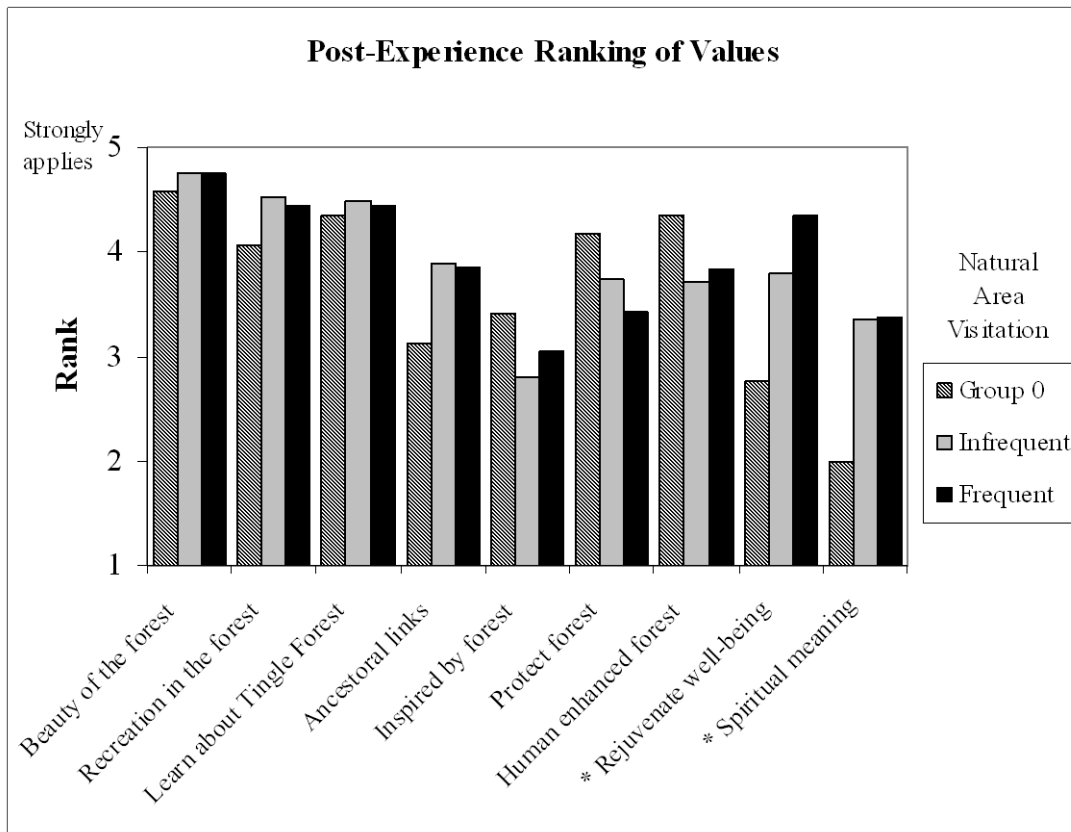


Figure 3: Average ranking of value statements by natural area visitors and group 0 after experiencing the TTW site.

The post experience response of natural area visitors ranked the statements: ‘rejuvenate well-being’ ($F=9.65$, $p<0.01$) and ‘spiritual meaning’ ($F=12.77$, $p<0.01$) significantly higher than group 0. There was no significant difference in response, to the remaining statements, between the groups.

There was no significant difference in average response to ‘spiritual meaning’ and ‘rejuvenate well-being’ between the infrequent and frequent natural area visitation groups. Natural area visitor groups ranked ‘spiritual meaning’ as statistically neutral after experiencing the site while group 0

again responded negatively. Group 0 responded neutrally to 'rejuvenate well-being' while the natural area visitor group responded positively.

Analysis of the responses to 'spiritual meaning' and 'rejuvenate well-being' found correlations at three differing levels: firstly between the pre and post visit responses to each respective statement; secondly between the pre visit responses to both statements and thirdly, between the post visit responses to both statements. The rankings of 'spiritual meaning' in the pre visit survey, across all groups, was significantly correlated with the ranking in the post visit survey ($r_s = 0.698$, $p < 0.01$). This was also the case for the 'rejuvenate well-being' statement ($r_s = 0.604$, $p < 0.01$). Comparison between pre visit rankings of 'spiritual meaning' and 'rejuvenate well-being' also revealed a significant positive correlation ($r_s = 0.572$, $p < 0.01$). This was also the case for the post visit rankings of these two statements ($r_s = 0.615$, $p < 0.01$). This indicates that the responses to 'spiritual meaning' and 'rejuvenate well-being' were treated similarly by respondents both prior to and after experiencing the site.

Discussion

Annual natural area visitation, as a key variable, is based on the premise that past experience in natural areas impact on present attitudes toward such environments (Howard 1998; Maslow 1968; Rolston 1998). The 'naturalness' of the areas visited was not included as part of the survey owing to the difficulties in interpretation of this concept. For the purposes of this study, it was assumed that the frequency of natural area visitation was significant in generating appreciation and awareness of nature while the location and extent of disturbance at the site of visitation was not.

This is supported somewhat by Rolston (1998) who comments that even very disturbed forest environments can provide some benefit in terms of appreciation of nature.

Chirgwin & Hughes (1997) found that a site providing an aesthetically pleasing environment with opportunities for learning appear to fulfill visitor perceptions of a beneficial ecotourism experience. This is at odds with the historical concept of nature based ecotourism as an activity undertaken in pristine isolated natural locations (Hvenegaard and Dearden 1998; Orams 1995). Hvenegaard & Dearden (1998) add that, in terms of the nature component of ecotourism, conservation or protection of nature also forms a significant aspect. In this context, the key values of the experience in this study relate to the statements: 'beauty of the forest', 'learn about Tingle Forest', and 'protect the forest'. Given that these statements were given the highest ranking by visitors, it is evident that their attitudes to the experience of the TTW site indicates a fulfilling ecotourism experience from the perspective of the visitor.

Visitors who did not regularly visit natural areas presumably do not consider natural settings as primary destinations for recreation. It is interesting to note that such visitors increased their ranking of the recreation aspect significantly from a neutral response to positive in the post experience survey. The increased ranking of the recreation aspect, by Group 0 visitors, indicates the site has fulfilled the recreational aspect of the experience despite their preconceptions. This demonstrates that the TTW appeals to both regular and non natural area visitors in terms of a fulfilling recreational experience.

While the TTW site appears to fulfill aesthetic, cognitive and recreational components of the visitor experience, response to the spiritual and well being aspects may highlight a difference between the study site and a true wilderness experience. Collins (1995) discusses the intrinsic spirituality of the

natural world that forms a subconscious motivating link between humans, nature and the deeper need to emotionally connect with natural environments. The spiritual and well-being component of an experience is considered to be of a higher order of fulfillment than the aesthetic and learning dimensions (Maslow 1968). While these aspects may rely partly on the attitudes and perceptions of the individual, the environmental context also plays a significant role (Crick-Furman and Prentice 2000; Manning, Valliere, and Minter 1999; Maslow 1968). Collins (1995) mentions that experiencing isolated wilderness (preferably in a solitary fashion) is necessary in order to truly achieve the spiritual dimension of interaction with nature. The low ranking of the spiritual aspect may reflect an inability of developed natural areas such as the TTW site to provide for such an experience.

Other studies have noted a link between forests and attitudes relating to spirituality (Hamilton-Smith 1998; Xu and Bengston 1997). A study by Xu and Bengston (1997) of national forest values in the U.S. found aesthetic and recreational perceptions of forest interaction were very positive while the idea of spiritual value in forests received a low response. Similarly, a mail and telephone survey of Tasmanian residents regarding attitudes relating to forests found that while spirituality received some positive responses, aesthetic, cognitive and personal well-being aspects were ranked much higher (Hamilton-Smith 1998). These results are comparable to those obtained in the present study. While Hamilton-Smith (1998) does not discuss the reason for the lower response to spirituality in any detail, Xu and Bengston (1997) attribute the ambiguity towards spirituality to a lack of understanding or mis-interpretation of the concept as well as an unwillingness to admit to feelings deemed unsavory or effeminate in the broader social context. Religious authors such as Collins (1995) and Spong (1998) discuss the increasing alienation of Western Society from organized mainstream religion and its traditional view of spirituality. This has resulted in the formation of neutral or negative perceptions of spirituality in the context of such institutions and

traditions amongst the current general population. As with the study by Xu and Bengston (1997) this may be a possible explanation for the generally negative reaction to the ‘spiritual meaning from nature’ statement through mis-interpretation of spirituality as having a generic religious meaning. However, as data on religious affiliation, involvement and views were not collected as part of the visitor survey, this hypothesis is pure conjecture.

The significant positive relationship between responses to ‘rejuvenate well being’ and ‘spiritual meaning’ may provide some explanation of the responses in this survey. The wording of the ‘rejuvenate well-being’ statement refers directly to physical and emotional wholeness or health. As the responses to this statement were significantly positively correlated with the ‘spiritual’ concept it seems evident that the spiritual meaning statement was perhaps associated, by visitors, with emotional connection with the environment more than with religious symbolism. Thus, low response to both concepts may be a result of an unwillingness to admit to hold such attitudes toward the forest environment.

The significant link between the response to ‘spiritual meaning’ and ‘well being’ and the frequency of natural area visitation also suggest that responses were determined by the extent of accumulated experiences with the natural environment. This relationship is supported by the notion that an accumulation of experience in natural areas results in an increasing complexity of interaction on the part of the visitor and a greater likelihood of emotional attachment (Eisenhauer, Krannich, and Blahna 2000; Maslow 1968; Williams, Patterson, and Roggenbuck 1992) . The fact that visitors who do not usually visit natural areas considered the spiritual aspect to be irrelevant may suggest they have not yet developed the complexity of interaction with natural settings required for admission, or perhaps appreciation, of the spiritual dimension while natural area visitors tend to respond more positively to this concept.

The decline in ranking of spirituality and well-being by natural area visitors after the experience again suggests the TTW site did not fulfill this component in the eyes of the visitor. This is perhaps a symptom of the developed nature of the site having an adverse effect on any expectation of these aspects of the experience being fulfilled.

While natural area visitors and non-visitors alike ranked the basic ecotourism aspects of aesthetic beauty and cognitive fulfillment positively, natural area visitors appeared gain a greater sense of personal well-being as a result of the experience. Although Rolston (1998) proposes that the essence of natural wilderness resides in the most developed forest while Wang (1999) suggests that emotional personal fulfillment is separate from the quality of the environment experienced; deeper appreciation seems to be more readily accessed by individuals who have developed a higher order of perception through accumulation of past experience in natural areas. That is, while the TTW site may afford some personal emotional fulfillment through providing contact with nature, the developed character of the site precludes those with no previous experience in natural areas and subsequently a less developed complexity of appreciation.

Hvenegaard & Dearden (1998) describe the ideal ecotourism experience as one in which visitors interact socially, economically and ecologically with a pristine natural environment in a sustainable way. This experience has traditionally been confined to a narrow segment of society mainly comprised of well educated, middle-aged individuals with above average incomes (Hvenegaard and Dearden 1998). Exposing visitors to a convincing representation of a natural environment, as described by Chirgwin & Hughes (1997), or a developed site such as the TTW, may not afford all of the benefits of 'true' ecotourism but may be readily accessible to a broader spectrum of society in a sustainable manner. The cost associated with this appears to be a watering down of the intensity

of the experience. Thus, many of the personal and ecological benefits of an ecotourism experience may be afforded in readily accessible developed natural areas, such as the TTW site, rather than being the exclusive domain of more expensive and elusive remote wilderness experiences.

Further research into defining the extent of development of particular natural areas as ecotourism destinations and the subsequent relative impact on visitors with varying degrees of natural area experience may be warranted. This may shed further light on the nature of ecotourism and the attitudes of its participants in terms of experiencing natural settings of varying degrees of development or disturbance.

References

- Ballantyne, Roy, Jan Packer, and Elizabeth Beckman. 1998. Targeted interpretation: exploring relationships among visitors' motivations, activities, attitudes, information needs and preferences. *Journal of Tourism Studies* 9 (2):14-25.
- Burton, Rosemary. 1998. Maintaining the quality of ecotourism: ecotour operators' responses to tourism growth. *Journal of Sustainable Tourism* 6 (2):117-142.
- Chirgwin, Sharon, and Karen Hughes. 1997. Ecotourism: the participants' perceptions. *Journal of Tourism Studies* 8 (2):2-7.
- Clarke, Jackie. 1997. A framework of approaches to sustainable tourism. *Journal of Sustainable Tourism* 5 (3):224-233.
- Cole, David N, Timothy P. Hammond, and Stephen F. McCool. 1997. Information quantity and communication effectiveness: low-impact messages on wilderness trail-side bulletin boards. *Leisure Sciences* 19:59-72.
- Collins, Paul. 1995. *God's Earth*. Melbourne: Harper Collins Religious.
- Crick-Furman, Deborah, and Richard Prentice. 2000. Modeling tourists' multiple values. *Annals of Tourism Research* 27 (1):69-92.

- Dawes, Robyn, and Tom Smith. 1985. Attitude and opinion measurement. In *The Handbook of Social Psychology: Theory and Method*, edited by G. Lindzey and E. Aronson. Hillsdale: Lawrence Erlbaum Associates Inc.
- Dowling, Ross. 1993. Tourism planning: people and the environment in Western Australia. *Journal of Travel Research* 31 (4):52-56.
- Eisenhauer, Brian, Richard Krannich, and Dale Blahna. 2000. Attachments to special places on public lands: an analysis of activities, reason for attachments and community connections. *Society and Natural Resources* 13:421-441.
- Field, Gil, and David Gough. 1998. The art of interpretation. *Landscape*, 1998, 36-41.
- Fodness, Dale. 1994. Measuring tourist motivation. *Annals of Tourism Research* 21 (3):555-581.
- Hamilton-Smith, Elery. 1998. Recreational and Related Visits to Tasmanian Forests. Hobart: Tasmanian Forest Research Council. June, 1998.
- Heberlein, Thomas. 1989. Attitudes and environmental management. *Journal of Social Issues* 45 (1):37-57.
- Heimstra, Norman, and Leslie McFarling. 1974. Chapter 5: The natural environment and behavior. In *Environmental Psychology*, edited by G. Holloway. Belmont: Wadsworth Publishing Co. Inc. p 117-148
- Howard, Jonathon. 1998. Environmental education and interpretation: developing an affective difference. *Australian Journal of Environmental Education* 14:65-69.
- Howard, Jonathon. 2000. Does environmental interpretation influence behavior through knowledge or affect. *Australian Journal of Environmental Education* 15/16:153-156.
- Hvenegaard, Glen T., and Philip Dearden. 1998. Ecotourism versus tourism in a Thai national park. *Annals of Tourism Research* 25 (3):700-720.
- Jurowski, Claudia, Muzaffer Uysal, Daniel R. Williams, and Francis P. Noe. 1995. An examination of preferences and evaluations of visitors based on environmental attitudes: Biscayne Bay National Park. *Journal of Sustainable Tourism* 3 (2):73-86.
- Manning, Robert, William Valliere, and Ben Minter. 1999. Values, ethics and attitudes toward national forest management: an empirical study. *Society & Natural Resources* 12 (5):421-436.

- Maslow, Abraham. 1968. *Toward a psychology of being*. 2nd ed. New York: Van Nostrand Reinold.
- McArthur, Simon, and C. Michael Hall. 1993. Chapter 2: Visitor management and interpretation at heritage sites. In *Heritage Management in New Zealand and Australia: Visitor Management, Interpretation and Marketing*, edited by M. Hall and S. McArthur. Auckland: Oxford University Press. p 18-39
- McGuire, William. 1985. Chapter 19: Attitudes and attitude change. In *Handbook of social psychology*, edited by G. Lindzey and E. Aronson. Hillsdale: Lawrence Erlbaum Associates Inc. p 233-346
- McKercher, Bob. 1996. Differences between tourism and recreation in parks. *Annals of Tourism Research* 23 (3):563-575.
- Orams, Mark B. 1995. Using interpretation to manage nature-based tourism. *Journal of Sustainable Tourism* 4 (2):81-94.
- Prentice, Richard C., Stephen F. Witt, and Claire Hamer. 1998. Tourism as experience: the case of heritage parks. *Annals of Tourism Research* 25 (1):1-24.
- Rolston, Holmes. 1998. Aesthetic experience in forests. *The Journal of Aesthetics and Art Criticism* 56 (2):157-166.
- Spong, John. 1998. *Why Christianity Must Change or Die*. San Francisco: HarperCollins.
- Walker, Lisa. 1996. Environmental awareness in the workplace: an evaluation study. *Australian Journal of Environmental Education* 12:71-76.
- Wang, Ning. 1999. Rethinking authenticity in tourism experience. *Annals of Tourism Research* 26 (2):349-370.
- Williams, Daniel, Michael Patterson, and Joseph Roggenbuck. 1992. Beyond the commodity metaphor: examining emotional and symbolic attachment to place. *Leisure Sciences* 14 (1):29-46.
- Winfield. 1996. Saving the giants. *Landscape*. Winter
- Xu, Zhi, and David Bengston. 1997. Trends in national forest values among forestry professionals, environmentalists and the news media, 1982-1993. *Society and Natural Resources* 10:43-59.