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The Zoo as Ecotourism Attraction – Visitor Reactions, Perceptions and Management Implications: The Case of Hamilton Zoo, New Zealand

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This paper reports results from a survey of 359 visitors to Hamilton Zoo, New Zealand. The questionnaire comprised items relating to motives for visiting the zoo, and evaluations of attributes, thereby permitting an importance-evaluation approach. The construction of the questionnaire was prompted by zoo management wishing to learn more about what motivated visits, and whether there were perceived deficiencies in visitors' experiences of the zoo. Like other studies (e.g. Turley, 2001) it was concluded that zoos represent an opportunity for family-based trips. However, while some opportunities exist for learning, on the whole visitors were not generally interested in acquiring detailed information about wildlife. Indeed, more importance was attached to the viewing of animals than to the recognition that possibly animals might require 'private places'. These findings prompt a discussion about the extent to which zoos might be able to replace or supplement trips to natural habitats as a means of viewing animals, and concludes that for this to happen significant changes in zoo layout would be required. Additionally, possible implications for zoo management are discussed.

Keywords: zoos, ecotourists, wild-life interactions, zoo management

Introduction: Zoos as an Attraction

Zoos have been proved to be sites consistently capable of attracting large numbers of visitors. Oduro *et al.* (2001) for example, found that Accra Zoo was able to sustain high visitation rates from 1987 to 1997, and that no visitors felt that their experience was a waste of time. They also found that children accounted for a very large proportion of visitors, and indeed Turley (2001) argues that children are an important determinant in the decision to visit a zoo. Ryan (2000) also found this to be true when considering wildlife attractions in a more general sense with reference to Australian tourist attractions based on wildlife, including National Parks. Similarly, Hunter-Jones and Hayward (1998) also draw attention to the role of children, and they further argue that zoos have a significant role to play in education and scientific research.

If learning is to be a significant component of the zoo visit experience, then some prior research indicates that the mode of information giving is a determinant of the learning that takes place. For example, Broad and Weiler (1998) examined learning opportunities at two different locations. The first was within a traditional zoo environment and the second a tourist theme park. The subject

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studied was visitor learning about tigers. Learning in the domains of cognitive, affective and behavioural modification was studied, and found to be determined by the nature of the display and interpretation being offered. In some instances learning is apparently facilitated by 'hi-tec' constructions which replace the animal with the image. For example, the German concept of the 'Zooseum' sought to develop the traditional zoo as an interactive museum using holographs, computer simulations and virtual reality techniques located in interlinked domes containing library resources, cinemas, exhibitions and workshop space (see *Verband Deutscher Freizeitunternehmen*, 1995).

With reference to scientific enquiry and the provision of learning opportunities, Orams (1996) has suggested a model of tourist–wildlife interactions associated with ecotourism, and he located zoos within the model as a means by which visitors could observe and learn about animals. It is argued that this perspective has value because there are reasons to believe that ecotourism is not a solution to tourism environmental issues but is, in fact, part of the problem. It can be observed that if ecotourism is postulated as 'the solution' to problems about tourism–environment interaction, then implicit within such statements is either a recognition of the failure of alternative modes of conservation or a deliberate avoidance of possibly better methods of such conservation. Ecotourism necessarily requires the commoditisation of wildlife and its habitat – that is, it creates a market value out of the observation of animals. Other forms of conservation, based upon deontological principles wherein conservation is perceived as a duty, do not require a direct human 'gaze' of wildlife with all of the possibilities for disruption that such viewing brings. Mason (2000) also alludes to such debate with specific reference to zoos by arguing that a need exists for more research into zoo tourism, and for identifying possible conflict between the educational, scientific and entertainment roles of zoos. Nonetheless, he also notes that arguably zoos can be 'considered as ecotourism attractions'(Mason, 2000: 338).

At the same time it must be recognised that, faced with the disappearance of natural habitats, zoos may have a role to play in the conservation of certain species. However, managers of zoos, much as they might wish to concentrate on issues of animal well-being, have to manage sites that are recreational and tourism attractions, and therefore are often required to generate operating revenues. Turley (1999a, 1999b), for example, has argued that, at least in the UK, zoos need to change their functions to reflect not only changing conservation roles, but also to better reflect public perceptions of what those roles are, if only because a significant source of revenue is still derived from public attendance.

Against this background of debate about the potential function of zoos, their role within tourism not only as an attraction, but as a possible substitute product for an ecotourism that impinges on increasingly endangered natural areas, there remains the question as to what is it that visitors seek. Holzer *et al.* (1998), in a study of 750 visitors to Cleveland Zoo, found that visitors were motivated by, in order of importance, family togetherness, enjoyment, novelty seeking, education and relaxation. Again they comment that children were an important determinant of visitation. In another USA study, this time of North Carolina Zoological Park in Asheboro, Andereck *et al.* (1991) found that visitors could be clustered along dimensions of visiting for purposes of recreation and novelty, going for the educating of others, going for specific educational reasons, and finally for photo-

graphic opportunities. They concluded that recreation and education of others (generally children) were significant motives. Other studies of visitors have examined the way in which they use interpretative signage, the viewing times and routes used, and which types of animals attract most attention. For example, Churchman and Bossler (1990) were able to predict routes taken by typical visitors after examining flows within Singapore Zoo, and they also noted that the mean time for viewing exhibits was 62.8 seconds, but with a high standard deviation based on the popularity of the animals and their behaviours (e.g. big cats could attract more attention when active, but less when sleeping). Similarly, Balmford (2000) compares findings from a study at London Zoo with earlier studies conducted at Zurich by constructing visitor time budgets, and uses the findings to discuss portfolios of species that are attractive to visitors and the implications for acquisition policy. Contrary to some expectations it was found that smaller and often lower costing mammals represented potentially good returns for both visitor and zoo management.

Ecotourism, Zoos and the Watching of Animals

From work undertaken by Orams (1996), Ryan (2000) and Shackley (1996, 2001) it would seem that, in wildlife tourism, a continuum might exist between, on the one hand, seeing animals in their natural habitat with minimal human intervention, to, on the other hand, seeing animals within zoos in environments that can only be sustained by human action. Ecotourism is often defined in ways that include the appreciation of wildlife, but there is usually a presumption that such wildlife is to be observed with minimal disturbance within its natural settings. For example, Weaver (2001: 15) specifies that ecotourism is 'a form of tourism that fosters learning experiences and appreciation of the natural environment, or some component thereof, within its associated cultural context . . . preferably in a way that enhances the natural and cultural resource'. Subsequently Weaver (2001: 108) notes that 'even non-consumptive forms of wildlife-based tourism, such as viewing, can have negative consequences for the species being observed'. Thus it appears that there are strong arguments to suggest that, at the very least, some forms of ecotourism involving animal encounters might be inimical to the purpose of animal protection. Briefly these reasons include the following.

(1) Threats of disruption of natural behaviours relating to nesting, breeding, feeding etc. For example, Higham (1998, 2001) notes that in the albatross colony of Tairoa Head, New Zealand, albatross have moved to sub-optimal nesting sites because of noise from visitor viewing areas, with the result that human intervention is required for supplementary feeding.
(2) Ecotourists are not necessarily modifying their behaviours when compared to non-ecotourists – that is, in spite of voiced concerns there appears to be little actual behaviour modification. For example, Markwell (1998) reports visitors succumbing to temptation to handle baby orangutans in Sabah, Malaysia.
(3) Threats to animal well-being exist from diseases communicable to some species from humans. For example, Butzynski and Kalina (1998) record how, in the Kahuzi-Beiga National Park in the Democratic Republic of the Congo,

six gorillas died of respiratory diseases, with 27 needing to be treated with antibiotics. In 1990, a bronchopneumonia outbreak in a group of 35 gorillas visited by tourists affected 26 animals, of which two died.

(4) Ecotourism is still a form of tourism, that is, it is about taking pleasure (Duffy, 2002). It still means an invasion of space and natural habitats not previously exploited by people as leisure space (McKercher, 1993; Wheeller, 1993).

(5) Ecotourism is a directed viewing of nature and wildlife, and that, like other forms of tourism, is the spectacle that is sought rather than a holistic understanding of natural processes (Ryan *et al*., 2000).

An argument that is advanced in favour of zoos is that they can act as a substitute for tourism in natural spaces, and in doing so may be able to meet some of the aspirations expressed by tourists. The viewing of animals in zoos takes place in controlled environments that explicitly state the dependency of animals on human intervention, and by definition they are not 'natural'. However, modern zoo design places an emphasis upon being 'animal friendly', even to the point where enclosures contain places of privacy for animals away from human eyes. The need for education becomes more prominent as a result because zoo management has to explain that animals might not always be seen. In some ways the epitome of the modern zoo is that of Disney's 'Animal Kingdom' in Florida, which emulates some of the experiences of the African safari tourist experience. While it might be argued that such a simulacrum of the plains of Africa lacks 'objective authenticity', it might be said to offer an existential authenticity as the safari lodge guest gazes out on a scene of grazing giraffes, while being cheaper, and perhaps safer, than a visit to Africa (Disney, 2002; Wang, 2000). For their part, Beardsworth and Bryman (2001: 101) argue that the zoo has been subjected to four themes of 'disneyfication', namely theming, dedifferentiation of consumption, merchandising and emotional labour, thereby offering 'an accessible and palatable model of humankind's continuing ability to exercise power over nature'.

Indeed, the very fact that Disney has chosen to extend its product portfolio into a zoo might be seen as proof of the statement made by Reynolds and Braithwaite (2001: 31), who argue:

> Tourism based on interactions with wildlife is increasing in popularity across the world. It is suggested that the values of conservation, animal welfare, visitor satisfaction, and profitability are often in conflict in wildlife tourism (WT) and tradeoffs are necessary. While there is a range of factors involved, the most germane are impact on the environment and quality of the experience.

How, then, might these considerations affect zoos? According to Hunter-Jones and Hayward (1998) a zoo is a general collection of predominantly wild animals, contained in an area of 110 acres or less, made accessible to human observation. However, the increased interest in wildlife has not necessarily had a positive impact on zoos. For example, Linge (1992), Stevens (1988) and Turley (1999b) from a marketing perspective, express concern because zoos occupy a 'mature' location within their product life cycle. 'Visits to see animal collections remain popular,

although there is some evidence to suggest that visits to traditional zoos are in decline' (Stevens, 1988: 28). However, given the conditions in which animals have been kept in traditional zoos, there is an argument that market forces may lead to the betterment of zoo design to the advantage of animal welfare and conservation programmes, and to the financial advantage of zoos by being more attractive to visitors.

Some of the literature about animal–human interactions has concentrated on the effects on tourists with reference to enjoyment, satisfaction and behaviour changes. Reynolds and Braithwaite (2001) suggest that the power to 'hold' visitors is increased by several factors. These include motion of the animal, animal size, visitor participation, presence of an infant, ease of viewability and visitors' perceptions. Further research done by others has complemented these findings. Ward *et al.* (1998) concentrated their research on the relationship between body size of animals and the popularity of the zoo, and conclude that there is a positive relationship, with both adults and children preferring exhibits with larger animals. Linge (1992) studied visitors' perceptions, zoo attributes thought to be important and expectations derived from educational sources such as nature videos viewed prior to their arrival. These videos were found to focus on the more spectacular parts of an animal's behaviour, so when people arrived at the zoo to find the animals sleeping, there was an inevitable sense of disappointment. Associated with a want for the spectacle is a need for interaction, and Linge (1992) suggests that visitor satisfaction will increase with the use of participation techniques such as visitors directly feeding animals. As noted above, Holzer *et al.* (1998) studied socialisation and adult zoo visitation and found that people were motivated by family togetherness, enjoyment, novelty seeking, education and relaxation needs. They also found that adults who had visited zoos as children were more likely to come as adults, and visit a variety of zoos.

Given a concern about issues of conservation of species and a more general concern about the state of the natural world, an emergent theme in zoo management is that of education. Mullan *et al.* (1987: 126) state:

> It would seem that because of international co-operation among zoos, the ideology of conservation and education has spread. All directors claimed that education was a fundamental concern and more particularly they argued that the intention was to give people an understanding of the natural world in order to preserve that world.

Among the educational studies are those of Churchman (1985), who asked how and what did recreational visitors learn at zoos, and what are the educational impacts of zoos and museums. Based on studies at Singapore and Melbourne zoos, he concluded that zoo administrators believe education is one of their four major goals; that the primary educational component of zoo exhibits is the animals themselves; and that learning is both cognitive and affective and varies among visitors on the basis of their previous knowledge. Along with the animals, enclosures and signs are potentially educational. Orams (1996) looks at educational management strategies in his research. He argues that the goals of education-based management strategies are to reduce the incidence of inappropriate visitor behaviour by encouraging a voluntary behaviour change and to increase visitor enjoyment and understanding, making a potential win-win situation for both wildlife and tourists.

The academic literature has also focused on conservation. Zoos are seen as a way of protecting wildlife, but they can also be perceived as cruel, according to Rhoads and Goldsworthy's (1979) research on the effects of zoo environments on public attitudes towards endangered wildlife.

> For example, the animals' ratings on gracefulness decreased from a natural environment to a semi-natural environment and decreased again to a zoo environment. As would be expected, freedom decreased for six out of the seven animals, as well as for all animals combined. There were also consistent decreases in happiness, dignity and naturalness. It is interesting that the animals' perceived security decreased in zoo environments even though they were evidently protected from predators. This could reflect their dependency on human caretakers and also contribute to their loss of dignity. Next while arousal increased in zoo environments, alertness decreased. (Rhoads & Goldsworthy, 1979: 284)

The Current Study

Hamilton Zoo is located ten minutes north-west of central Hamilton and it is only an hour and a half's drive from Auckland or Rotorua on the North Island of New Zealand. The zoo has over 52 acres of landscaped grounds, incorporating native vegetation, and native and exotic animals. Of these grounds about 35 acres are currently allocated to enclosures. The zoo is a contributor to the Australasian Species Management Programmes (ASMP), participating in breeding programmes for Category 1 and 2 endangered species and providing model habitats. There are approximately 600 animals. In many ways it exemplifies best practice among modern zoos, and one feature of the zoo is its free flight aviary. Hamilton Zoo also maintains an active breeding programme and among its successes are the White Rhinoceros and Ring Tailed Lemur. The zoo is clearly signposted, and visitors can stroll the paths to each exhibit, starting from the cafeteria and walking in a huge circle to finish where they started. It sustains an open, friendly atmosphere, is a place for family and friends, and it has a very active local support group. The zoo is managed by full-time, specialist staff employed by the Recreation and Leisure Department of the Hamilton City Council.

The study was initially commissioned under the auspices of the Co-operative Research Centre in Sustainable Tourism's wildlife research programme, located at the Northern Territory University, with the purpose of generating a comparative study between Australia and New Zealand. At this stage the immediate objective was to assess visitor reactions to Hamilton Zoo, provide the participating zoo with feedback as to visitor perceptions of zoos, and in due course to offer a comparison with similar types of zoos. Additionally, it was thought possible to make a contribution to the debate about the role of zoos as tourist attractions and the degree to which they can act as a substitute for gazing on animals in natural and wild settings.

The questionnaire

The questionnaire reflects the objectives of the research, and it is divided into four sections, namely: (1) a list of zoo attributes and a rating of the performance of these attributes for visitors; (2) an evaluation of the zoo visited, so permitting an

importance-evaluation framework to be established; (3) a section requesting open-ended responses and observations; and (4) demographic data as to age, gender and party composition to permit analysis of variance (ANOVA) by such variables.

The items that comprise the questionnaire were informed by issues raised in the literature, as described above, plus observation and discussion with zoo personnel. It therefore comprised two scales, with questions relating to aspects such as conservation programmes, family outings, ease of viewing animals, the nature of enclosures, educative programmes and the like. The items in both scales were essentially the same, differing only in that in the first case respondents were asked to record what attributes of a zoo were important to them and in the second, how they evaluated Hamilton Zoo on the same items. In short, a Fishbein (1963, 1967) importance-evaluation approach was adopted. Basically, this argues that attitudes comprise cognitive and affective components and thus knowledge (or an assessment of what is thought to be pertinent and important) and its evaluation through experience are key components in attitude formation. The approach has been used widely in tourism research and has been discussed by a number of researchers (e.g. Ho, 2001; Ryan, 1995). The methodology and its advantages and disadvantages are well understood. Finally, items were associated with a seven-point Likert-type scale with a non-response option as recommended by Ryan and Garland (1999).

The survey was administered at the Hamilton Zoo cafeteria by the second author. This spot was chosen as respondents would have time to fill in the survey as they sat and relaxed. Respondents self-completed the questionnaire with the researcher being at hand at another table. A total of 381 surveys were completed of which 359 were used in the data analysis. One disadvantage of the research design is that it led to lengthy questionnaires. It was found that completing the questionnaire took time, and when accompanied by young children this posed problems for some respondents. Therefore, 13 questionnaires were not fully answered. Although it was not really possible to ask young children to complete a questionnaire, it is important to note that (1) children's enjoyment of the trip influences adults' responses, and (2) it was noticeable that often adults did ask the children's opinions as they were answering the questions.

A second issue pertaining to questionnaire design was that, as the first two sets of questions were Likert-scale questions asking the respondents to rate the items according to whether they were important to them (see Table 1) and then if the Hamilton Zoo satisfied them, some people thought the items had accidentally been put in twice in spite of adopting a rubric that emphasised 'importance' and 'satisfaction'. The presence of the interviewer was of help here. One issue that is always present is the degree to which respondents adopt a 'response set', and, while it is not always possible to discern this, careful examination of completed returns led to some being discarded (in total 22 were discarded).

The Nature of the Sample

Of the 359, 65% were females and 35% males. With reference to age, 3% were under 18 years of age, 19% were between the ages of 18 and 24, 29% between 25 and 34, 24% between 35 and 44, 14% between the ages of 45 and 54, 4% between

Table 1 Importance ratings of the zoo's features (mean scores)

		Number	*Mean*	*Standard deviation*
1	That the toilets are clean	351	6.49	1.08
2	That animal enclosures are a 'good' size	353	6.47	0.95
3	That animal enclosures contain stimulating materials	350	6.47	0.91
4	That the zoo is a place for bringing the family	351	6.41	1.05
5	That visitors have good views of animals	353	6.40	0.95
6	It allows people to see wildlife without destroying natural habitat	350	6.38	1.10
7	We must support zoos so they can develop breeding programmes	348	6.36	1.11
8	Zoos are important places for conserving wildlife	351	6.34	1.05
9	That animals are 'doing natural things'	352	6.32	1.02
10	That animal enclosures replicate native habitats	352	6.31	1.09
11	Good signposting when entering the zoo	357	6.24	1.11
12	That young children can easily see the animals	351	6.23	1.20
13	It is just a pleasant place to spend family time	349	6.17	1.09
14	That the toilets are regularly inspected by zoo staff	343	6.17	1.31
15	That the zoo provides toilets at different places	351	6.16	1.11
16	That visitors have viewing platforms	353	6.13	1.09
17	That footpaths are wide for easily passing people	351	6.13	1.14
18	That footpaths are wide for use of strollers [push chairs]	351	6.11	1.30
19	That footpaths are clearly marked	353	6.07	1.16
20	That information is easily accessible	350	6.10	1.13
21	It is just a pleasant place to spend family time	350	6.00	1.10
22	That the zoo is a place for bringing friends	351	5.94	1.30
23	That animals have private places away from visitors	351	5.92	1.35
24	It keeps my children occupied and happy	337	5.91	1.21
25	That information is available through signs attached to enclosures	354	5.91	1.24
26	That there are different places to get a drink of water/soft drinks	350	5.81	1.41
27	A friendly greeting by the cashier	359	5.74	1.67
28	There are family tickets for admission	348	5.73	1.33
29	The price of admission	357	5.70	1.34
30	That there are attractive vistas	349	5.65	1.32

Table 1 (*contd*)

		Number	*Mean*	*Standard deviation*
31	Ease of car parking	356	5.59	1.35
32	That animals are interesting subjects of conversation	349	5.53	1.47
33	Ease of seeing the actual entrance	357	5.50	1.51
34	That there is information at appropriate heights for young children	350	5.39	1.70
35	Availability of guides to the zoo	352	4.26	1.76
36	That information is available through purchased brochures	340	4.06	1.75
37	Availability of booklets that can be purchased	345	3.68	1.78
38	That information is available through taped commentaries	335	3.61	1.77

Note: 1 = Unimportant, 7 = very important

the ages of 55 and 64, and 7% were over 65. All but four visitors came in groups comprising two or more people. This appeared to match visitor statistics maintained by the zoo, and it was thought that the sample was representative other than the under-recording of young children. As a measure of sampling adequacy, the Kaiser-Meyer-Olkin statistic was 0.88. The non-response rates for items on the analysed 359 questionnaires were low and random in nature, with the one exception of items relating to information giving, where both non-response rates and standard deviations increased. This is commented upon below.

Results

The first part of the survey contained 38 questions where the respondents were asked to indicate on a seven-point Likert scale the importance of listed factors in visiting a zoo. The results are listed in Table 1 by descending order of mean scores. The most important item to respondents was that the toilets were clean, with a mean score of 6.49. That animal enclosures are of a 'good size' and 'contain stimulating materials', were also highly important to the respondents, both having a mean of 6.47. That the zoo is 'a place for bringing family' and 'visitors have good views of animals' are both in the top five most important aspects of the zoo. It may be significant that the conservation role of zoos is recognised, with the items 'We must support zoos so they can develop breeding programmes' and 'Zoos are important places for conserving wildlife' being ranked seventh and eighth.

It is also evident that information providing services, such as the provision of guides, brochures and tapes, was not regarded as being especially important. Indeed, the first specific reference to information provision by signs attached to enclosures is ranked at number 25. The dominant themes appear to be those of a

family day out with a recognition that the conservation function of zoos is important. However, it might be argued that the latter function provides the opportunity for the 'day out with the family'. The intellectual motive (as measured by information collection items) is not generally highly ranked. Unfortunately, it is not possible to say why this result has occurred, but a possible factor might be that with repeated visits the need for information is reduced. It is noticeable that the standard deviation is much higher for these items than for many others, indicating that there is a segment for whom additional information is important. However, seeking to analyse this by the demographic variables produced little relationship of any statistical significance other than a tendency that those under the age of 18 and over the age of 65 had the highest demand for information. Observation lends itself to a hypothesis of grandparents and grandchildren using such information for interaction, but this cannot be supported from the available data.

One conventional means of assessing the presence of underlying themes within a data set and the contribution to variance is the use of factor analysis. Principal component factor analysis with varimax rotation was used on the importance scale. The Scree Test was used to indicate the number of factors to be rotated and this confirmed the conventional test of using the cut-off point of eigenvalues in excess of a value of 1.0 (see Table 2).

Table 2 indicates that the 38 items consist of nine main themes.

(1) 'Ease of use for families', which accounts for 12.5% of the variance (Alpha coefficient = 0.83).
(2) 'Animals and their enclosures', which accounts for 12.5% of the variance (Alpha coefficient = 0.85).
(3) 'Wildlife conservation', which accounts for 7.4% of the variance (Alpha coefficient = 0.86).
(4) 'Availability of information about the zoo and animals', which accounts for 7.5% of the variance (Alpha coefficient = 0.79).
(5) 'Toilet facilities are up to standard', which accounts for 6.9% of the variance (Alpha coefficient = 0.85).
(6) 'Atmosphere and service', which accounts for 6.7% of the variance (Alpha coefficient = 0.66).
(7) 'Entrance', which accounts for 5.8% of the variance (Alpha coefficient = 0.72).
(8) 'Attractive parkland', which accounts for 3.2% of the variance (Alpha coefficient = 0.69).
(9) 'Information through signs', which accounts for 4.1% of the variance (Alpha coefficient = 0.67).

The second part of the survey also asked respondents to indicate on a seven-point Likert scale their level of satisfaction with Hamilton Zoo. Table 3 shows the results of the top 20 means in descending order. The respondents were most satisfied with the aspect that the zoo was a place to bring the family. Respondents were also highly satisfied with the zoo when it came to the animal enclosures replicating native habitats. The third highest aspect the respondents were satisfied with was that they had viewing platforms.

The questionnaire design permitted the development of an importance – performance analysis. A comparison of the means of the importance scale with

Table 2 Rotated component matrix of zoo features

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
That footpaths are wide for use of strollers	**0.763**	0.194	0.169	0.042	0.209	0.141	0.187	0.106	0.063
That young children can easily see animals	**0.736**	0.252	0.104	–0.019	0.131	0.085	0.152	0.060	0.160
There is information at heights for young children	**0.699**	0.212	0.077	0.313	0.064	0.051	–0.037	–0.025	0.069
That footpaths are clearly marked	**0.651**	0.183	0.295	–0.054	0.277	0.086	0.182	0.160	0.052
That footpaths are wide enough for passing people	**0.574**	0.253	0.172	–0.073	0.279	0.026	0.143	0.339	0.187
That the zoo is a place for bringing the family	**0.526**	0.331	0.208	–0.124	0.225	0.405	0.066	0.209	0.088
It keeps my children occupied and happy	0.434	0.160	0.214	0.161	0.122	0.334	0.029	0.267	–0.342
There are family tickets for admission	0.404	0.193	–0.036	0.256	0.159	0.344	0.339	–0.101	–0.236
That animal enclosures are a good size	0.190	**0.777**	0.176	–0.054	0.172	0.179	–0.016	0.168	0.087
That animals are doing natural things	0.203	**0.746**	0.174	–0.037	0.087	0.147	–0.034	0.155	0.063
That animal enclosures contain stimulating materials	0.146	**0.660**	0.277	–0.094	0.303	–0.048	0.269	0.072	0.212
That animal enclosures replicate native habitats	0.159	**0.644**	0.284	0.007	0.136	0.080	0.319	0.070	0.080
That animals have private places away from visitors	0.226	**0.612**	0.254	0.401	0.076	–0.138	0.134	–0.138	–0.130
That visitors have viewing platforms	0.389	**0.584**	0.055	0.154	0.071	0.090	0.001	0.282	0.066
Zoos are important places for conserving wildlife	0.154	0.255	**0.815**	0.040	0.087	0.128	0.080	0.175	0.023
People see wildlife without destroying natural habitat	0.181	0.282	**0.800**	0.090	0.081	0.100	0.089	0.133	0.083
Support zoos to develop breeding programmes	0.164	0.256	**0.732**	0.104	0.134	0.129	–0.020	0.015	0.198
It is just a pleasant place to spend family time	0.330	0.075	0.428	–0.057	0.306	0.321	0.135	0.316	–0.055
Information is available through taped commentaries	0.183	–0.099	0.002	**0.767**	–0.092	0.045	0.089	0.240	0.083

Table 2 (*contd*)

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Availability of booklets that can be purchased	–0.076	0.092	–0.010	**0.756**	0.060	0.213	0.221	–0.186	–0.039
Availability of guides to the zoo	–0.068	0.131	0.104	**0.727**	–0.029	0.145	0.036	–0.018	–0.074
Information is available through purchased brochures	0.102	–0.080	0.040	**0.643**	0.089	0.024	0.015	0.125	0.051
That toilets are clean	0.242	0.320	0.099	–0.031	**0.795**	0.114	0.142	0.039	0.168
That the toilets are regularly inspected by staff	0.206	0.314	0.161	0.058	**0.739**	0.099	0.062	0.160	0.059
That the zoo provides toilets at different places	0.409	0.023	0.115	0.105	**0.553**	0.341	0.101	0.127	0.027
That visitors have good views of animals	0.286	0.384	0.100	–0.125	0.396	–0.071	0.295	0.192	0.382
A friendly greeting by the cashier	–0.018	0.114	0.020	0.186	0.166	**0.730**	0.226	0.178	–0.090
Animals are interesting subjects of conversation	0.155	0.065	0.231	0.208	0.002	**0.638**	0.130	0.028	0.221
That the zoo is a place for bringing friends	0.301	0.027	0.168	0.138	0.101	**0.563**	0.087	0.124	0.261
Ease of car parking	0.070	0.023	0.048	0.146	0.133	0.162	**0.763**	0.194	0.049
Ease of seeing the actual entrance	0.135	0.123	0.047	0.188	0.024	0.112	**0.755**	0.073	0.022
Good signposting when entering the zoo	0.352	0.195	0.167	–0.050	0.177	0.368	**0.514**	0.010	0.045
That there are attractive vistas	0.073	0.228	0.093	0.117	0.083	0.080	0.145	**0.788**	0.103
That the parkland is aesthetically pleasing	0.158	0.281	0.298	0.018	0.149	0.286	0.082	**0.656**	0.049
That there are different places to get a drink	0.274	–0.101	0.206	0.183	0.404	0.133	0.088	0.411	–0.186
The price of admission	0.193	0.069	–0.058	0.003	0.333	0.015	0.317	0.390	0.294
Information is on signs attached to enclosures	0.158	0.203	0.210	0.004	0.160	0.223	0.005	0.128	**0.707**
That information is easily accessible	0.232	0.436	0.274	0.162	0.080	0.152	0.185	0.026	0.461

Note: Those factors with a large loading for a particular factor greater than 0.5 are in bold; factors under 0.5 but having a common thread are underlined.

Table 3 Evaluation of zoo features scale: Means and standard deviations

	Number	*Mean*	*Standard deviation*
1 That the zoo is a place for bringing the family	350	6.27	1.05
2 The animal enclosures replicate native habitats	348	6.12	1.09
3 The visitors have viewing platforms	350	6.04	1.08
4 There is a family ticket for admission	325	6.02	1.33
5 The zoo is an important place for conserving wildlife	343	5.98	1.17
6 Ease of seeing actual entrance	353	5.93	1.24
7 The zoo is a place for bringing friends	341	5.87	1.24
8 Ease of car parking	353	5.86	1.42
9 The animal enclosures are a 'good size'	350	5.84	1.29
10 The parkland is aesthetically pleasing	352	5.80	1.26
11 The animals have private places away from visitors	346	5.78	1.23
12 That information is available through signs attached to enclosures	344	5.74	1.30
13 Hamilton has good breeding programmes	256	5.73	1.30
14 The information is easily accessible	349	5.67	1.29
15 The footpaths are wide for easily passing people	351	5.67	1.42
16 The animals are 'doing natural things'	350	5.66	1.32
17 The footpaths are wide for use of strollers	341	5.65	1.47
18 There are attractive vistas	350	5.65	1.28
19 The price of admission	352	5.64	1.38
20 That animals are interesting subjects of conversation	350	5.64	1.21

Note: 1 = very dissatisfied, 7 = very satisfied

the second set of satisfaction ratings can be undertaken by use of *t*-tests. However, the key issue is what is the purpose of such a comparison? Ryan and Huyton (2000) argue that a two-fold measure of satisfaction is inherent in such a comparison. First, there is a measure of 'absolute' satisfaction as measured by the evaluation scale; and, second, there exists a measure of relative satisfaction in that it is argued that the key issue is whether people are being satisfied in those things that are of importance to them. It might, on the other hand, following the arguments inherent in the confirmation–disconfirmation paradigms of ServQual (Parasuraman *et al.*, 1994), be queried whether such a gap is no more than a measure of perceived performance of function rather than a measurement of satisfaction. The findings showed that a statistically significant difference existed in 23 of the 38 items where comparison was possible. Because of issues of inter-

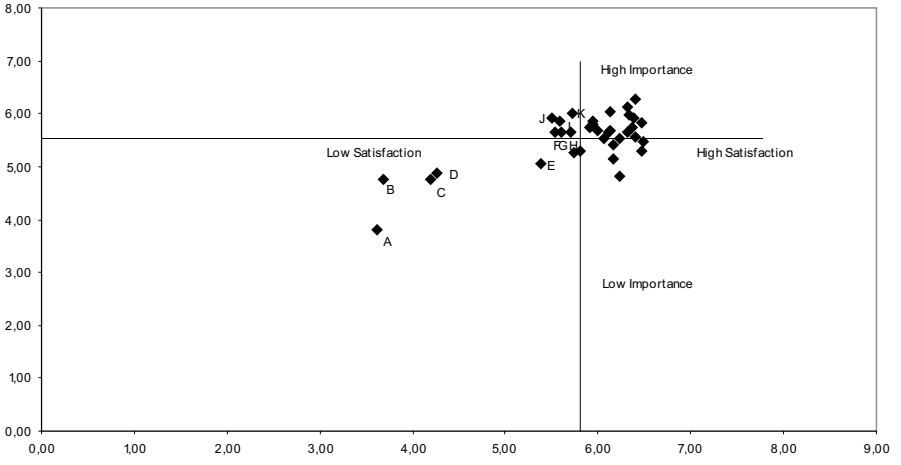

Figure 1 Scatter diagram of perceived importance and satisfaction of various features of Hamilton Zoo

pretation, and because the specifics of these results may be of interest only to Hamilton Zoo, it is thought that they might only be of peripheral concern to a more general audience, and thus the results are simply summarised in Figure 1. This is a scatter plot split into four areas by drawing two axes derived from (1) the mean of all the importance items, and (2) the mean of all the performance items. The top left-hand cell represents items of high importance but low satisfaction, and so it represents areas that are problematic for management. The top right-hand cell represents areas where there are both high importance and satisfaction scores. The bottom left-hand cell is one where both importance and evaluation possess low scores, and the bottom right-hand cell represents high satisfaction ratings being recorded in areas of low importance.

When this diagram was used, five items clearly stood out in the bottom left hand corner where there is low satisfaction and low importance. These items are:

- A. that information is available through taped commentaries;
- B. availability of booklets that can be purchased;
- C. that information is available through purchased brochures;
- D. availability of guides to the zoo;
- E. that there is appropriate information at appropriate heights for young children.

In the top left-hand corner there are also five items, these are problematic since they are considered of high importance but are of low satisfaction. These items are:

- F. that animals are interesting subjects of conversation;
- G. that there are attractive vistas;
- H. the price of admission;
- I. ease of seeing the actual entrance;
- J. there are family ticket for admission.

That ticket prices are of importance and that many respondents would wish for lower admission prices is not a surprise. The other two items on the left-hand side of Figure 1 are on the boundary of satisfaction and thus might be perceived as 'marginal'.

Respondent comments on improvements

The questionnaire also included a number of open-ended questions, one of which was 'If you had an opportunity to improve the zoo, what recommendations would you make to the zoo management?' The responses are listed below in the belief that such points might be of interest to zoo managers generally. In fact, there were many different answers, so to make the analysis easier the responses were divided into sections. These were:

- animals;
- feeding;
- paths;
- signs;
- enclosures/viewing;
- area;
- drinks, toilets, café, playground;
- other.

Of the respondents 21.2% suggested something to do with animals. These answers included, more animals (with elephants, pandas, an aquarium, more monkeys, baboons, more birds in the aviary, an area with snakes, other reptiles and spiders, and a children's zoo area with farm animals being mentioned). Other suggestions included more things for the animals to play with and better water ponds for the animals. Just over 6% made reference to feeding, including advertising feeding times so people could watch if they wanted to, letting children feed the animals, suggestions for feeding baby animals such as goats and pigs and having more feeding times so the animals are active.

Five per cent recommended that paths could be improved by, for example, sealing all the paths, making footpaths wider, and flattening the paths. About 11% of respondents recommended more signs at the zoo and for getting to the zoo and felt they could be improved in a variety of ways. Other recommendations included a road sign directly opposite the entrance with an arrow, more signage from Hamilton and Cambridge, more signs on roads leading to the zoo, more signs to find particular animals, more information and pictures on the signs including how many animals are in the cage and what are their usual sleeping hours, and better information on the signs about the breeding programmes that the zoo is involved in. Fifteen per cent of the respondents felt that enclosures and viewing could be improved. Recommendations for the enclosures were to make them bigger (especially the bird cages and the monkey cages), and some of the enclosures seemed to some respondents to be somewhat barren while others had too much rubbish in them. A final idea was to have more theme areas, for example African animals in one part of the zoo. Recommendations on the viewing were: better viewing for the children with perhaps a step so adults do not have to lift them up to see, the tiger enclosure should be more open to public view, viewing should be improved for the giraffes and zebras, and also there

should be more overview spots. The amenities and aesthetics of the surrounding area accounted for 5.8% of respondents' answers. The recommendations made were: rest seats to be placed in shaded areas, easier access entries into the parrot court, continue to provide shading and foliage over pathways, some of the ponds seemed stagnant and more colour was needed on display cases. About 9% wanted changes to occur in the café, playground, toilets and drinks facilities. These changes involved having another kiosk half way around, more toilets, more drinking fountains, more variety in the restaurant, additional picnic tables in the barbeque area, the staff in the restaurant to be more friendly and more electric rides in the playground. A further 9% mentioned such things as the council should provide more funding, having zoo staff spread around who can tell people about the animals, having areas where you can push a button and hear a recording about the exhibits, providing financial information to those who are interested, providing golf carts so people do not have to walk, and finally having donation boxes for each animal.

Again, while the context for this paper is that of Hamilton Zoo, some implications of these comments are again listed in case they are of wider interest for zoo management. Some 17 items are listed in Table 4 with recommendations on how to improve them. This list is not meant to be exhaustive, but simply indicative of some issues that zoo management might bear in mind.

Discussion

This discussion will attempt to link the findings to the wider literature noted above, and with reference to the debate about zoos as possible ecotourism attractions. First, the results support findings that zoos are primarily places of relaxation and family-oriented trips (e.g. Hunter-Jones & Hayward, 1998; Turley, 1999a, 1999b, 2001). However, unlike Hunter-Jones and Hayward (1998), or Andereck *et al.* (1991), the educational motive was found to be of lower importance. Instead the motives are much closer to the findings of Holzer *et al.* (1998) in emphasising family togetherness, enjoyment and novelty seeking, with the added nuance (noted below) that design perceived to be animal friendly adds to the enjoyment of the visit.

Do these findings have any implications for the development of ecotourism and the view that zoos can be an effective substitute for viewing wildlife in natural settings? Generally, it might be concluded that the answer to such a question is in the negative. The intellectual motive usually associated with ecotourism was not overly present among this sample. On the other hand, the sample would not normally be regarded as an ecotourism-oriented group of people as defined by studies of the characteristics of ecotourists (e.g. see Weaver, 2001 and his discussion of socio-demographics, pages 50 to 55). Indeed, over one third of the respondents were accompanied by children under the age of 11 years. Zoos like Hamilton Zoo simply emerged as being primarily interesting places to visit with young children and which reinforce positive family interaction. While respondents recognise the conservation values of a zoo like Hamilton, the level of interest in acquiring more information was less important to them. Indeed, Table 1 indicates that having a good view of the animals is rated more highly than animals having private places away from people's gaze (6.4 vs. 5.9, $p < 0.001$).

Table 4 Recommendations on management at Hamilton Zoo

Items	*Recommendations*
The cashier gave us a friendly greeting	Staff training
There is good signposting when entering the zoo	• Cut down some of the trees so sign is more visible • Put big arrow on the other side of the road • Make a new sign that is bigger and brighter
The animal enclosures replicate native habitats	• Plants and materials should be provided within the enclosures to help replicate the animals' native habitat
The animal enclosures contain stimulating materials for animals	• Animals should have similar materials as they have in the wild to keep them active and entertained • What the material is would depend on the animal
The visitors have good views of animals	• Make sure there is a path around most of the enclosure so visitors can get close-up views of the animals • Make sure there are platforms for young children to see over the fences • Do not plant too many trees in front of viewing platforms that animals can hide behind
The information is easily accessible	• Information about the animals should be directly beside the enclosure • It should be easily visible and big enough for many people to read at one time • Extra information on the animals should be available at reception if people want to find out more about a particular species or the breeding programmes
The animals are 'doing natural things'	• Animals need to have materials and have their enclosures as much as possible like their natural habitats
The animal enclosures are a 'good' size	• Animal enclosures should be a size which the public perceives as adequate for a particular animal

Table 4 (*Contd*)

Items	*Recommendations*
There is information at appropriate heights for young children	• The information and pictures displayed on boards should be at a height where young children can read them • Billboard type information where it can always be seen by everyone • If using stands then either have them at a low height or put a platform in front of them
Young children can easily see the animals	• Fences with wire should always be used so children can see through it • No shrubs should be planted near the viewing platforms • Steps or platforms should be used for children to stand on
The footpaths are clearly marked	• Arrows to certain animals or boards directing people to certain animals should be consistent throughout the zoo • Exits and facilities should also be marked clearly
The footpaths are wide for use of strollers [push chairs]	• Since the zoo is a family place paths should be wide enough for two strollers to pass each other easily • If there is not enough room then a common way should be made so people will not be passing each other very often, this could be done with arrows on the paths for everyone to follow
The footpaths are wide for easily passing people	• Families can take up lots of room so footpaths should be wide enough for three to four people across • If there is not enough room then a one-way system should be made so people will not be passing each other very often. This could be done with arrows on the paths for everyone to follow
The zoo provides toilets at different places	• Several sets of toilets should be found around the zoo • Two is usually adequate but with young children and a long walk perhaps there needs to be three

Table 4 (*Contd*)

Items	*Recommendations*
The toilets are clean	• Toilets should be inspected and cleaned several times throughout the day, especially at busy times • If you find it gets busy and people do not have time perhaps that is an indication that more staff are needed • Specific times should be scheduled so that staff can get into a routine of doing it regularly
The toilets are regularly inspected by zoo staff	• Specific times should be scheduled so that staff can get into a routine of doing it regularly
There are different places to get a drink	• Water fountains should be found regularly around the area. Up to four different fountains would be appropriate. • Also there should be two cafés where drinks could be purchased

There is a temptation to conclude that the concern about the size of animal enclosures is as much related to the family feeling good about their visit as it is about a genuine concern over animal welfare. Although the evidence is not conclusive, it can be argued that concern about animal welfare would have been evidenced by a recognition that an emphasis upon enclosures replicating natural habitats might be inconsistent with visitors having a good view of animals, and that having a good view of animals might be inconsistent with animals' assumed need for areas away from human intrusion. Of course, it is recognised that issues are not that clear cut. Zoo animals may become habituated to high flows of visitors and thus not be bothered by them – indeed in some instances some animals may feel deprived if denied human presence.

It can be hypothesised that zoos are deemed to be artificial constructs and thus by definition of little appeal to 'ecotourists', thereby confirming indirectly the thesis advanced by Beardsworth and Bryman (2001). Equally, zoos seem to be more successful at attracting a family market than an ecotourist segment that has a genuine concern about animal welfare. Indeed, Ryan (2000) concluded from a study of visitors to natural habitats that there existed a difference between declared motive and actual behaviour – that ecotourists were prepared to place animal habitats second to their wish to view the animals. If zoos are to replace natural habitats as 'safe' places to observe endangered species, then it might be argued that Disney has, again, got it right. People want to observe animals in as natural a setting as is possible, to have the experience of 'peering through undergrowth'. The zoo theme park has to be a theme park of nature. Just as roller

coaster rides provide the adrenalin rush with very little risk, so for zoos to be effective simulated ecotourism experiences, 'a guided safari' needs to be replicated. For many visitors it might not matter that the animals are fed by rangers, vaccinated or are wholly dependent upon humans. That is already happening in the 'wild' – national parks are increasingly managed islands and are replicas of a vanishing habitat. Perhaps they are already little more than large zoos. The lesson appears to be that for zoos to become more attractive as a tourist destination, they must become more like replicas of natural areas. At present it might be argued that zoos are not relieving any pressure at all on remaining natural 'wild' areas of the world. They encourage a belief that animals are important as subjects of a human gaze; they attract family audiences that pass on values that endorse the viewing of animals for entertainment purposes, but the question to be asked is whether they attract the ecotourist into any form of participation in animal conservation through breeding programmes.

Such arguments, it is recognised, go beyond the evidence existing in this paper, but nonetheless, the argument and what evidence that does exist are both congruent with each other. If these are important issues, it requires tourism academics to look more carefully at them and devise means of questioning that tease out these types of relationships. While it is not uncommon for academics to conclude that more research is required, in this case it seems that such a conclusion is appropriate. But the implication of such a conclusion is that the self-completion questionnaire of the type used here, while of interest to specific zoos for immediate management purposes, does little to draw out more profound questions. However, in this instance the questionnaire and the resulting analysis has given rise to a further list of issues, and it needs to be emphasised that the Co-operative Research Centre programme of wildlife tourism is investigating these issues further.

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References

Andereck, K.L., Caldwell, L.L. and Debbage, K. (1991) A market segmentation analysis of zoo visitors. In *Tourism: Building Credibility for a Credible Industry* (pp. 359–72). Proceedings of the Travel and Tourism Research Association 22nd Annual Conference, Hyatt Regency Hotel, Long Beach, California, 9–13 June.

Balmford, A. (2000) Separating fact from artifact in analyses of zoo visitor preferences. *Conservation Biology* 14 (4), 1193–15.

Beardsworth, A. and Bryman, A. (2001) The wild animal in late modernity: The case of the Disneyfication of zoos. *Tourist Studies* 1 (1), 83–104.

Broad, S. and Weiler, B. (1998) Captive animals and interpretation – a tale of tiger exhibits. *Journal of Tourism Studies* 9 (1), 14–27.
Butzynski, T.M. and Kalina, J. (1998) Gorilla tourism: A critical look In E.J. Milner-Gullard and R. Mace (eds) *Conservation of Biological Resources.* Oxford: Blackwell.
Churchman, D. (1985) The educational impact of zoos and museums: A review of the literature. *Resources in Education* 20 (12), 133–61.
Churchman, D. and Bossler, C. (1990) Visitor behaviour at Singapore Zoo. *Resources in Education* 25 (8), 126–42.
Disney (2002) Animal kingdom. On WWW at http://www.disney.ca/vacations/disneyworld/II/A/4/.
Duffy, R. (2002) *A Trip Too Far: Eco-tourism, Politics and Exploitation*. London: Earthscan.
Fishbein, M. (1963) An investigation of the relationships between beliefs about an object and attitude toward that object. *Human Relationships* 232–40.
Fishbein, M. (1967) *Readings in Attitude Theory and Measurement.* New York: Wiley.
Higham, J.E.S. (1998) Tourists and albatrosses: The dynamics of tourism at the Northern Royal Albatross Colony, Taiaroa Head, New Zealand. *Tourism Management* 19 (6), 521–33.
Higham, J.E.S. (2001). Managing eco-tourism at Taiaroa Royal Albatross Colony. In M. Shackley (ed.) *Flagship Species: Case studies in Wildlife Tourism Management* (pp. 17–30). Burlington, VT: International Eco-tourism Society.
Holzer, D., Scott, D. and Bixler, R.D. (1998) Socialization influences on adult zoo visitation. *Journal of Applied Recreation Research* 23 (1), 43–62.
Hunter-Jones, P. and Hayward, C. (1998) Leisure consumption and the United Kingdom (UK) zoo. *Tourism and Visitor Attractions Leisure Culture and Commerce* (pp. 97–107).
Linge, J.H. van (1992) How to out-zoo the zoo, *Tourism Management.* 13(1), 115–117.
Markwell, K. (1998) Taming the 'chaos of nature': Cultural construction and lived experience in nature-based tourism. Unpublished PhD thesis, University of Newcastle, Australia.
Mason, P. (2000) Zoo tourism: The need for more research. *Journal of Sustainable Tourism* 8 (4), 333–9.
McKercher, B. (1993) Some fundamental truths about tourism: Understanding tourism's social and environmental impacts. *Journal of Sustainable Tourism* 1 (1), 6–16.
Mullan, B and Marvin, G. (1987) *Zoo Culture.* London: George Weidenfeld & Nicolson.
Oduro, C., Antwi-Boasiako, C. and Yao, F.C.A. (2001) Visitor assessment of the Accra Zoo from 1987 to 1997. *Ghana Journal of Forestry* 10 (1), 27–33.
Oh, H. (2001) Revisiting importance-performance analysis. *Tourism Management* 22 (6), 617–27.
Orams, M.B. (1996) A conceptual model of tourist–wildlife interaction: The case for education as a management strategy. *Australian Geographer* 21 (1), 39–51.
Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1994) Moving forward in service quality research: Measuring different customer-expectation levels, comparing alternative scales, and examining the performance-behavioral intentions link. *Marketing Science Institute Working Paper* 94-114.
Reynolds, P. and Braithwaite, D. (2001) Towards a conceptual framework for wildlife tourism. *Tourism Management* 22, 31–42.
Rhoads, D.L. and Goldsworthy, R.J. (1979) The effects of zoo environments on public attitudes toward endangered wildlife. *International Journal of Environmental Studies* 13 (4), 283–87.
Ryan, C. (1995) *Researching Tourist Satisfaction – Issues, Concepts, Problems*. London: Routledge.
Ryan, C. (2000) Australian tourists and their interest in wildlife based tourism attractions. In R. Robinson, P. Long, N. Evans, R. Sharpley and J. Swarbrooke (eds) *Motivations, Behaviour and Tourists Types: Reflections on International Tourism* (pp. 341–56). Sunderland: Business Education.
Ryan, C. and Garland, R. (1999) The use of a specific non-response option on Likert type scales. *Tourism Management* 20 (1), 107–14.

Ryan, C., Hughes, K. and Chirgwin, S., (2000) The gaze, spectacle and eco-tourism. *Annals of Tourism Research* 27 (1), 148–63.
Ryan, C. and Huyton, J. (2000) Who is interested in Aboriginal tourism in the Northern Territory, Australia? A cluster analysis. *Journal of Sustainable Tourism* 8 (1), 53–88.
Shackley, M. (1996) *Wildlife Tourism*. London: Routledge.
Shackley, M. (2001) *Flagship Species: Case studies in Wildlife Tourism Management*. Burlington, VT. International Eco-tourism Society.
Stevens, T. (1988) Zoos, a walk on the wild side. *Leisure Management* 8 (4), 28–30.
Turley, S.K. (1999a) Conservation and tourism in the traditional UK zoo. *The Journal of Tourism Studies* 10 (2), 213.
Turley, S.K. (1999b) Exploring the future of the traditional UK zoo. *Journal of Vacation Marketing* 5 (4), 340–55.
Turley, S.K. (2001) Children and the demand for recreational experiences; The case of zoos. *Leisure Studies* 20 (1), 1–18.
Verband Deutscher Freizeitunternehmen, (1995) Zooseum: Die neue Prasentation von Tieren [Zooseum: The new way of presenting animals]. *Amusement Technologie und Management* 25 (97), 32–5.
Wang, N. (2000) *Tourism and Modernity –A Sociological Analysis*. Oxford: Pergamon.
Ward, P., Mosberger, N., Kistler, C. and Fischer, O. (1998) The relationship between popularity and body size in zoo animals. *Conservation Biology* 12 (6), 1408–11.
Weaver, D (2001) *Ecotourism*. Milton, Qld: John Wiley and Sons Australia.
Wheeller, B. (1993) Sustaining the ego. *Journal of Sustainable Tourism* 1 (2), 121–30.