

# Visitors' memories of wildlife tourism: Implications for the design of powerful interpretive experiences

*Tourism Management* (2011), 32, 4, 770-779.

Roy Ballantyne<sup>a</sup>, Jan Packer<sup>a</sup> and Lucy A. Sutherland<sup>a1</sup>  
The University of Queensland, School of Tourism  
University of Queensland, 4072  
Australia

## Abstract

One of the aims of wildlife tourism is to educate visitors about the threats facing wildlife in general, and the actions needed to protect the environment and maintain biodiversity. To identify effective strategies to achieve this aim, this paper examines participants' memories of their wildlife tourism experiences and explores processes through which such experiences can lead to long-term changes in conservation behaviour. Findings are based on 240 visitors' extended open-ended responses to a follow-up web survey administered approximately four months after a visit to one of four marine-based wildlife tourism venues in South-East Queensland. Qualitative analysis revealed four levels of visitor response to the experience, implying a process involving what visitors actually saw and heard (Sensory Impressions), what they felt (Emotional Affinity), thought (Reflective Response), and finally what they did about it (Behavioural Response). Recommendations are provided for ways tourism managers and wildlife interpreters can maintain and strengthen these dimensions of memorable experiences in order to enhance visitor satisfaction and encourage visitors' long-term adoption of environmentally sustainable practices.

## 1. Introduction

The sustainable development of the tourism industry has been the topic of much debate in the last two decades (Cater and Goodall, 1992; Duffy, 2002; Holden, 2000; Honey, 1999; Sharpley, 2000; Smith and Eadington, 1992) and this period has seen significant improvements and greater investment in a more sustainable industry through, for example, efforts in tourism standards (Koeman, Worboys, De Lacy, Scott and Lipman, 2002) and guides to good practice (World Tourism Organization, 2000). A consequent outcome of the emphasis on sustainable tourism has been an increasing demand from government, industry bodies and tourists to provide visitor experiences that foster understanding, appreciation and conservation of the environment. In particular, the demand from consumers for experiences that incorporate learning and education is increasing rapidly (Ritchie, Carr & Cooper, 2003). There is an expectation that tourism should play an important role in aiding visitor adoption of environmentally sustainable principles and practice – education and awareness-raising are now recognised to be key goals of tourism experiences (Marion and Reid 2007; Secretariat of the Convention on Biological Diversity, 2004). In this regard, nature-based tourism is perceived to have a particularly important role to play (Ballantyne & Packer, 2010).

---

<sup>1</sup> Present address: Australian National Botanic Gardens, Canberra.

Tourism experiences that provide opportunities for direct contact with nature are well placed to deliver a strong and positive educational message to their visitors. Such experiences are important in today's society, where increasing urbanisation and mechanisation have led to a situation where many people feel disconnected from nature (Forestell 1993). Forestell (1993) argues that without a strong connection with the natural environment, it is difficult for people to understand the impact of issues such as the overuse of resources. Research has demonstrated that direct experiences in nature can promote emotional affinity toward nature, which in turn leads to nature-protective behaviour (Kals, Schumacher and Montada, 1999).

This paper specifically focuses on one area of nature-based tourism – wildlife tourism, which is defined as “tourism based on encounters with non-domesticated (non-human) animals... [that] can occur in either the animals' natural environment or in captivity” (Higginbottom, 2004, p.2). Wildlife tourism offers unique opportunities for participants to reconnect with nature in a potentially life-changing way and has become increasingly popular in recent years. The opportunities and experiences offered through wildlife tourism are diverse, including, for example, bird watching, whale and dolphin watching, zoos, aquariums and wildlife parks. Reynolds and Braithwaite (2001) identified seven categories of wildlife tourism products:

- nature-based tourism with a wildlife component;
- locations with good wildlife opportunities;
- artificial attractions based on wildlife;
- specialist animal watching;
- habitat specific tours;
- thrill-offering tours; and
- hunting/fishing tours.

Recent research (Ballantyne and Packer, 2009; Ballantyne, Packer, Hughes, & Dierking, 2007; Lee and Moscardo, 2005; Tisdell and Wilson, 2005; Zeppel & Muloin, 2007) confirms that wildlife tourism can have positive short- and long-term impacts on visitors' environmental learning by:

- developing a respect and appreciation for wildlife and nature;
- raising awareness of environmental issues;
- promoting environmentally sustainable attitudes and actions; and
- building tourists' capacity for the longer term adoption of sustainable living practices.

It can also have a positive impact on the environment itself by:

- providing income for the ongoing protection and sustainable management of wildlife and wildlife habitats (Buckley, 2002; Fennell, 1999; Goodwin, Kent, Parker & Walpole, 1998; Wells, 1997; Wilson and Tisdell, 2001; Zeppel & Muloin, 2007);
- encouraging visitors to make financial and non-financial contributions to environmental causes (Powell and Ham, 2008);
- providing socio-economic incentives for the conservation of natural resources (Higginbottom, Northrope and Green, 2001; Schänzel and McIntosh, 2000); and

- influencing tourist behaviour during a visit (Medio, Ormond & Pearson, 1997; Orams and Hill, 1998).

The educational aspects of wildlife tourism experiences not only impact on visitor learning and subsequent behaviour, but are also an important contributor to visitor satisfaction with the experience. Moscardo and Saltzer (2004), for example, found that seeing large, rare or new species, being able to get close to wildlife in the natural setting, and being able to learn about the wildlife and setting, all contributed to visitor satisfaction.

Although such positive outcomes have been identified, it should be noted that concerns have also been raised about negative impacts of tourism and tourists on short and long term animal behaviour (Constantine & Bejder, 2007; Green and Giese, 2004; Green and Higginbottom, 2001; Higginbottom, Northrope & Green, 2001), physiology (Knight and Cole, 1995) and reproductive success (Constantine & Bejder, 2007). Negative impacts on the environment, which in turn impact on the wildlife, may also be caused by trampling, wave action, management actions and pollution (Reynolds & Braithwaite, 2001). It is important, therefore, that the designers and managers of wildlife tourism experiences ensure that such experiences are educational in nature (promoting environmental knowledge, attitudes and behaviour) and are delivered within a framework informed by responsible tourism management practices. Such an approach is essential for the long-term development of an effective and sustainable wildlife tourism industry. While the need to consider tourist management issues in relation to on-site behaviour has been acknowledged as important in the design of interpretive wildlife experiences, it is only recently that the need to incorporate an explicitly educational focus into such experiences has been widely recognised.

In order to further develop the positive impact of wildlife tourism experiences, research is needed into the processes through which such experiences lead to long-term changes in visitors' environmental behaviour. Bentrupperbäumer (2005) similarly argues that a consideration of the psychological and sociological processes underlying human-wildlife relations is necessary in order to understand wildlife tourism. In exploring the human dimensions of wildlife interactions, she highlighted the human need for contact with nature, and noted that an emotional attachment to wildlife might play an important role in motivating pro-environmental behaviour.

The research reported in this paper deconstructs the wildlife tourism experience in order to develop an in-depth understanding of the nature of memorable experiences, the variables that contribute to visitors' engagement in and enjoyment of these experiences, and the relationship between visitors' experiences and their subsequent adoption of environmentally responsible behaviours. To this end, visitors' memories of wildlife tourism experiences, recorded four months after their visit, were analysed qualitatively. Allowing this time to elapse after the experience ensures that recorded memories are relatively long-lasting. It also allows time for participants to reflect on the experience and to take action in response to the wildlife encounter. This is important, as Curtin (2005, p3) noted that "lived experiences gather significance as we reflect on and give memory to them". Previous research that has examined memory and learning as a result of free-choice learning experiences in museums (Falk and Dierking, 1997; 2000;

McManus, 1993; Medved and Oatley, 2000) and World Expositions (Anderson, 2003; Anderson & Shimizu, 2007) has provided valuable insights into the process of visitor learning and meaning making as well as aspects of the experience that have a lasting impact. This paper thus makes a significant contribution to our understanding of the ways in which a wildlife tourism experience can and does impact on visitors' understanding, attitudes and actions in relation to the environment, and as such it provides useful information to those concerned with the design and management of powerful and effective tourist experiences.

## 2. Method

Data were collected as part of a larger project investigating the impact of wildlife tourism experiences on visitors' learning for sustainability (Ballantyne, Packer and Falk, 2010). In the larger project, data were collected at four marine-based wildlife tourism venues (two where animals were captive and two where they were non-captive), over three stages: pre-visit (N = 1286); post-visit (N = 841); and follow-up (N = 240). This paper presents a *qualitative* analysis of visitors' extended open-ended responses on the *follow-up web survey*, administered approximately four months after the visit.

### *Wildlife tourism experiences*

The study was conducted with visitors four months after they had participated in one of four wildlife tourism experiences: an aquarium visit (AQ), a marine-based theme park visit (MTP), a turtle viewing experience (TV), or a whale watching tour (WW).

The aquarium (AQ) was located at Mooloolaba on Queensland's Sunshine Coast. The aquarium includes eight different zones, including a touch tank area, an underwater shark-viewing tunnel and animal shows. Visitors may also participate in various interactive animal encounters. The aquarium is committed to communicating the message of conservation of the environment to the wider community. Conservation messages are included in the interpretive signage throughout the aquarium. A typical visit to the aquarium takes approximately 2-3 hours. According to Reynolds and Braithwaite's (2001) typology, the aquarium would be considered an "artificial attraction based on wildlife".

The marine-based theme park (MTP) was located on Queensland's Gold Coast. The park offers a range of marine-based rides, shows and attractions including Shark Bay (a two-level exhibit and touch pool that allows visitors to view sharks, stingrays and a range of tropical fish both above-water and underwater); Polar Bear Shores (a naturalistic environment that also includes underwater viewing windows); and Dolphin Cove (featuring a demonstration of dolphin-trainer interactions). The park is committed to educating guests about the marine environment, and playing an active role in Australian marine research and rescue. All exhibits and shows provide detailed interpretive information designed to increase public awareness and promote conservation efforts in relation to the marine environment. A typical visit to the park takes a full day. According to Reynolds and Braithwaite's (2001) typology, the marine theme park would be considered an "artificial attraction based on wildlife".

The turtle viewing experience (TV) took place at the Mon Repos Conservation Park, near Bundaberg in Queensland (Australia). The site is operated by the Queensland Parks and Wildlife Service (QPWS) as a turtle-based wildlife tourism venture and access to the Park is limited to tours operated by QPWS staff. Visitors are able to view turtles nesting on Mon Repos beach between October and February, and hatchlings emerging from January to March. The Mon Repos Visitor Centre has interpretive displays and signage on turtles and conservation, as well as an outdoor amphitheatre where rangers conduct interpretive talks and show videos and slides. Much of the commentary focuses on conveying the importance of protecting turtles and their habitats. A typical visit takes from 2-5 hours, depending on when the turtles arrive on the beach. According to Reynolds and Braithwaite's (2001) typology, the turtle viewing experience would be considered "specialist animal watching".

The whale watching tours (WW) took place off Queensland's Gold Coast and Hervey Bay. The tours were operated by commercial whale watching companies and allowed visitors to witness the annual migration of humpback whales along the Southeast Queensland coast. Although regulations prevent tourist boats from approaching too closely to the whales, the boats are allowed to stop and let the whales approach them, and on most occasions the whales do come very close. Tourists can usually observe various types of natural whale behaviour such as tail slapping and breaching. On-board commentaries provide information about whales, whale behaviour, and issues relating to whaling and whale conservation. The tours take approximately 4 hours. According to Reynolds and Braithwaite's (2001) typology, the whale watching tours would be considered a combination of "specialist animal watching" and "thrill-offering tours".

### *Participants*

A total of 240 visitors responded to the web survey (out of a total of 508 who provided email addresses – a response rate of 47%). Participants' demographic characteristics are presented in Table 1. Respondents at all sites were predominantly female (due to a higher response rate to the initial survey request among females, rather than higher visitation rates). Most visitors were in the "middle" age category (30-49 years) although whale watching tourists tended to be older. The overwhelming majority of whale-watching and sea turtle visitors were first-time visitors; approximately half of the aquarium and marine theme park visitors had visited the site before.

Insert Table 1 here

Visitors' pre-visit environmental orientations and motivations were also measured (see Ballantyne, Packer and Falk, 2010 for further information regarding both the method and the results). In general, visitors reported a relatively high level of engagement in pro-environmental practices, a moderate level of environmental curiosity, and a low level of environmental advocacy. The dominant motivations at all sites were for enjoyment and for learning and discovery.

### *Instrument*

There were only 13 questions in the web survey and most of these were short-answer or multiple choice items. However, there were four items where respondents were asked to describe in greater detail their memories of and responses to their experience at the

wildlife tourism site. They were specifically asked to write as much as they could on these four questions – the questions included brief prompts designed to encourage a wide range of detailed responses regarding the impact of the wildlife tourism experience:

1. What are your strongest or most vivid memories of your visit to [wildlife tourism site]? (For example in relation to how you felt when you saw the [specific animals], other things you saw, or the things you learnt).
2. Have you talked about your [wildlife tourism site] visit to other people? If yes, what kinds of things have you spoken about?
3. What did your [wildlife tourism site] visit teach you about marine life and marine life conservation? (For example, do you recall any information about the possible impacts of humans on marine life?)
4. In what ways (if any) have your feelings about your own role in marine life conservation changed as a result of your [wildlife tourism site] visit?

#### *Data analysis*

Responses were collated across questions and across participants, yielding almost 27,000 words or 54 pages of text. The major themes appearing in visitors' memories and responses were identified using an iterative process of coding and categorisation. These themes were further analysed to produce a higher-order hierarchical structure of four meta-themes, each representing an increasingly deeper level of impact of the experience. At this stage of the analysis, responses were pooled across all four sites in order to allow the common themes to emerge. Verbatim quotes from the raw data are used to illustrate and support these themes in the presentation of results.

Once the four higher-level themes had been identified and defined using the pooled data, the raw data were coded again by two researchers in order to determine the relative frequencies of the four themes. For each of the 240 respondents, each of the four themes was coded as present or absent, thus yielding a total of 960 binary ratings. The two raters achieved 70% agreement in their judgements. (This relatively low level of agreement was due mostly to one coder being over-inclusive across all four categories, producing 59% "present" ratings, compared with 42% for the more restrained coder.) For the final quantitative analysis, a theme was only recorded as present if it was so rated by both coders. The degree of correspondence between these final codes and the more restrained of the two raters was 93%. Chi-square analyses were then performed in order to test for differences according to research site, gender, age-group and first vs repeat visit.

### **3. Results**

The qualitative analysis identified four levels of visitor response to their wildlife tourism experiences. These are defined below and then presented in detail with illustrations from the web survey transcripts. (The abbreviations AQ, MTP, TV and WW are used to indicate the site that the respondent had visited.)

1. Sensory impressions (visitors report vivid visual, auditory, olfactory or tactile memories of their experience);
2. Emotional affinity (visitors report emotional responses to the experience or emotional connections with the animals they observed);
3. Reflective response (visitors report new insights as a result of cognitively processing their experience or make comments that indicate they have reflected on what they saw or heard); and
4. Behavioural response (visitors report having taken specific actions in response to their wildlife tourism experience or report a heightened awareness of the need for such action).

### ***3.1 Sensory impressions***

In recalling their wildlife tourism experiences, participants often reported quite vivid memories that focussed on their sensory impressions of the experience. Commonly, visitors described visual images that conveyed a sense of immediacy, even four months after the experience:

*Watching those little guys burst out of the sand with their legs flapping away like egg whisks. (TV)*

*The strength and grace, the swimming motion [of the whales]. (WW)*

*The wonderful colours of the fish on display. (AQ)*

Other senses were also sometimes involved in these memories:

*The smell of the otters. (AQ)*

*Otters and their cat noises. (AQ)*

*Listening to the ocean. (TV)*

*Being on the beach at night time with the sea breeze. (TV)*

In particular, being able to touch the animals made a lasting impression on some visitors:

*Being able to touch the sea creatures in the rock pools. (AQ)*

*Feeling how strong the hatchlings' flippers were! (TV)*

Interestingly, these vivid sensory impressions did not appear to be limited to any particular site or animal species. In fact, in some cases, the sensory impressions extended to the environment itself (e.g., the feel of the breeze, the sound of the ocean).

It was perhaps this multi-sensory element that set the “real life” experience apart from those available by other means:

*You can watch all sorts of documentaries, but nothing compares to that real life viewing. (TV)*

*The turtles themselves look more awesome in real life than any picture one takes. (TV)*

For many visitors, it was the opportunity to be physically close to the animals that made the experience novel or remarkable. For those visiting sites where the animals were captive, this proximity often meant that they could see the animals from a new or different perspective:

*For me personally it was the size of, and the proximity to, the big sharks in Shark Bay, when viewed from the underwater area, that impressed me most. (MTP)*

*The Polar Bear – it was awesome to have a right-up-close look at this big and powerful animal. (MTP)*

*The viewing tunnel was really excellent giving us the opportunity to have a really close up look at the fish which we would not be able to do in any other environment. (AQ)*

For those visiting sites where animals were non-captive, proximity carried a sense of privilege, and this sense of privilege itself became a long-lasting memory of the experience:

*How amazing it was to be so close to a wild sea creature. (TV)*

*I just felt absolutely amazed to be able to see such beautiful animals in their natural environment. (WW)*

*A sense of privilege at seeing the baby turtles burrow out of the sand and head for the sea as possibly one of only a very few humans ever to see these turtles... Overall, the sense of privilege and awe will stay with me. (TV)*

### **3.2 Emotional affinity**

Not only were visitors’ sensory impressions imbued with an emotional tone, they also specifically referred to emotional content in their memories of the experience. In many cases, these emotional events were among their strongest memories:

*My strongest memory of my visit to Mon Repos is the feeling of watching this incredible experience unfold before me. (TV)*

*The lump-in-the-throat experience of seeing these huge turtles lumbering out to sea after depositing the eggs, the baby turtles emerging from their sand home and going out to the wide unknown world of predators and hopefully survival, the majestic way they went slowly back to the sea. (TV)*

*The feelings I had when I first spotted the whales. (WW)*

The emotions aroused by the wildlife tourism experience did more than produce strong and vivid memories, however. Some visitors conveyed a sense of empathy, or an emotional connection with the animals, which involved understanding and identifying with the animal's "feelings", and led them to care about the animal's well-being. These feelings were particularly pronounced in the Turtle Viewing experience, where many visitors referred to the animals' "struggle" to accomplish their task:

*Seeing a straggling hatchling fighting its way out to sea, battling against the tiny waves as if they were enormous. Hoping this one makes it. (TV)*

*Watching the huge turtle drag her body back to sea. It was definitely a huge labour for her to get up on shore and back down. (TV)*

*The determination of the turtle to get up the beach and to lay her eggs. I didn't like the torch lights being shined on her. I thought she must be very scared. (TV)*

Some visitors felt they had interacted or communicated with the animals. This was most pronounced in relation to the whale watching tours, but was also evident to a lesser extent at the turtle viewing experience:

*How beautiful the whales were, that you could actually look into their eyes. (WW)*

*Interacting with the whales and seeing how they related to humans. (WW)*

*The little turtles hatching and making their way to the shore past little kids. It was as if the kids were linked with the turtles. (TV)*

Many attributed human characteristics to the animals (especially mammals), which further contributed to the emotional affinity between human and wildlife. Such attributions were common at both the captive and non-captive sites:

*I got quite emotional when I saw the dolphins, they are so intelligent and graceful. (MTP)*

*It felt like they were watching us, like they were curious about what we were going to do. (WW)*

*The trust these gentle giants have in us. (WW)*

*My strongest feelings were when I saw the dolphins and what smart amazing animals they are. Also the bears as to what their thought patterns are about people looking at them. (MTP)*

The idea that in the non-captive animal settings (whale-watching in particular), the animals had chosen to approach the visitors, led to a heightened sense of privilege and emotional affinity:

*I felt honoured that they wanted to come to us and have a good look at us, as much as we wanted to look at them. (WW)*

*Elation, and wonder and appreciation that these wild animals wanted to interact with us... They obviously enjoyed the contact with humans. (WW)*

There was a counterpoint to this feeling, however, at Mon Repos, where the animals (sea turtles and hatchlings) were not perceived as having “chosen” to approach, and some visitors reported feeling like “intruders”:

*Seeing the big turtle laying was exciting, but I couldn't help but feel that we were getting in the way of nature. (TV)*

*I felt that the turtles were being invaded and that there was too much human interference! (TV)*

### **3.3 Reflective response**

Some visitors' memories contained evidence of a reflective response to the experience. Such responses did not simply reproduce the factual information that had been given, but showed evidence of further cognitive processing. Indeed, reflective responses were not always dependent on the interpretive content of talks or signage, but sometimes arose as a natural extension of sensory or emotive experiences, or were facilitated by social interaction. This cognitive element provided the “missing link” between seeing and acting.

Some visitors reported that reflecting on their **sensory impressions** had led to a greater understanding of the animals. Ideas from the interpretive commentary were often incorporated into their reflections, and they moved quite seamlessly between memories of what they had observed and what they had been told:

*I never realised how beautiful these animals were until I got up close and personal with them, I had no idea how large and agile they were and how complex their social structure was. (WW)*

*I remember it being great to be so close to the dolphins and learn about issues that affect health and longevity. (MTP)*

*It's a quiet spot that allows for reflection – it always makes me sad to think how many of these creatures die in the ocean through being caught in fishing nets. (AQ)*

However, it was the combination of **emotional affinity** with a **reflective response** that appeared to have the most powerful impact on visitors, leading to a concern and respect not only for the specific individuals encountered in the wildlife tourism experience, but the species as a whole. In a way, the wildlife experience made environmental issues more personal and relevant. There was evidence of this at all four sites:

*I saw the turtles walk to the sea and I felt that humans need to protect them; the world is for all of us. (TV)*

*The sheer beauty and magnificence of the whales and concern for their safety as a species and as individuals. (WW)*

*I have more appreciation for the marine animals because of my visit, so this has made me a bit more aware of who you could be hurting. (AQ)*

*My children are now more aware of marine life being more than just something to look at, i.e., that they are living creatures and should be respected. (MTP)*

In some cases, this concern also extended beyond the species observed:

*The feeling of insignificance that I had as a human watching the wonderful creatures... It made me much more aware of the cycle of life that surrounds us and that every human action has an effect on the planet. (WW)*

Again, information from interpretive commentaries and signage was incorporated in these reflections. However, it was the information visitors had been given about the dangers faced by “their” animals that had stayed in their memories longer than the factual information about the animals. Awareness of these dangers aroused feelings of protectiveness, taking the emotional connection a step beyond empathy:

*I don't recall any factual information about the whales, but by experiencing them first hand, it impacted on me just how important it really is to protect our waterways and oceans from contaminated substances by always thinking about the impact of what you're about to pour down the drain. (WW)*

*I don't remember the details of the information given, other than that humans can transmit disease to turtles, as they can to any other wild animal. (TV)*

*Humans do more damage on this planet than any other creature... We all must take responsibility for looking after the planet. (AQ)*

Many visitors became aware of the possible impact of their own everyday actions, which when combined with feelings of empathy and protectiveness, set the stage for a change in behaviour:

*They really need to be considered when boating or fishing - there are not as many as I thought there were and in fact they are an endangered species. (TV)*

*The particular turtle that we watched had a badly damaged shell, most likely from a propeller. We also moved the eggs from low on the beach to a higher area to protect them. I know that the same turtles come back year after year and that plastic bags and fishing line can be fatal for the turtles if they reach the ocean. (TV)*

*We don't look after what we have and the realisation that it is not going to be there forever and our children will miss out on what we have if we don't take care of it. (AQ)*

For some visitors, reflection on their experience led to an integration of cognitive and emotive responses, and the expression of stronger emotions such as passion, heartbreak, indignation and panic. These responses were usually associated with a greater awareness of the need for action:

*My feelings have become more passionate about the need to be aware of our impact on the environment. This is a direct impact of the experience of Sea World. (MTP)*

*The seals... they are gorgeous. It breaks my heart to see people endangering the animals we have left. (AQ)*

*[It is] criminal that the Japanese are intent on their slaughter. I feel as they [whales] do not have a voice it's up to us to speak for them and defend their right to live in peace. (WW)*

*I felt completely relaxed watching them [whales] and panic at the same time as to how to protect these amazing animals. (WW)*

For those who were already environmentally aware or active before their wildlife tourism experience, reflection acted as a reinforcer, with the power to maintain and strengthen existing attitudes and behaviours:

*It gave me greater depth of knowledge and understanding of marine issues, which has reinforced why I have always supported conservation of our natural heritage, whether terrestrial or marine. (AQ)*

*This experience reminded me how passionate I feel about nature conservation in general. (TV)*

The reflective response was also active into the future, with some visitors reporting that the wildlife tourism experience heightened their interest in, and understanding of, information received after the visit from various sources:

*When watching Happy Feet at the movies – I believe I heard and saw more of the pollution and conservation messages as a result. (MTP)*

*I've been watching a lot of David Attenborough DVDs on marine life...I guess my visit to Sea World influenced that. (MTP)*

There was some evidence that **social facilitation** may also contribute to the process of reflecting on the wildlife tourism experience. This includes both discussion with companions, and with staff interpreters or volunteer guides. Social interaction provides an incentive for participants to formulate and communicate their own thoughts and feelings; the comments and questions posed by others stimulate curiosity; and feelings of companionship and security contribute additional positive emotions to the experience.

A number of visitors commented on the satisfaction of being able to share their experience with family members:

*Watching my nephew get totally absorbed in the touching tanks near the entrance. (AQ)*

*The most amazing experience was taking the kids through the tunnel. (AQ)*

*The strongest and most vivid memory of our visit ... was the look of awe and wonder on my four-year-old son's face as he came into contact with such an amazing creature in its natural habitat. (TV)*

Even sharing the experience with strangers added an extra dimension for some visitors:

*Reactions of passengers, like disbelief, pure joy. (WW)*

*There was a blind woman in our group and I remember the look of absolute joy and amazement when the guide put the little hatchling into her hand. (TV)*

*The seal show, in particular the crowd's reaction to it. (AQ)*

The social aspects of the experience seemed to be particularly important at the sites where animals were captive. This may be explained by the greater attracting power of the animals themselves in the non-captive wildlife experiences (i.e., attention was directed towards the animals rather than companions or other visitors), the negative impact of perceived overcrowding in the non-captive wildlife experiences (e.g., *it was hard to see things because I think there were too many people there which made it less special*), or differences in visitor motivations associated with the different types of experience (when asked in the pre-visit survey what they hoped to get out of their visit, visitors to the captive-animal sites placed more importance on spending quality time with family or friends, and interacting with others, than visitors to the non-captive-animal sites,  $t [1262] = 9.301, p < .001$ ;  $t [1260] = 2.649, p = .008$  respectively).

Another aspect of social facilitation was the opportunity to discuss the experience with others after the visit, which more than 90% of participants reported having done:

*I spoke to a friend who is a turtle lover. When I told her about my experience at seeing the turtles, she went to Mon Repos herself. (TV)*

### **3.4 Behavioural response**

One of the desired outcomes of wildlife tourism is to contribute to environmental conservation by raising community awareness and encouraging visitors to take steps towards more responsible and sustainable everyday behaviours. Some visitors indicated that they had indeed taken steps in this direction as a result of their wildlife tourism experience, and were able to report specific actions that they had already taken, or intended to take. Overall, 7% of respondents were able to report a specific *new environmental behaviour* that they had adopted as a result of the visit. An additional 11% reported a heightened awareness of the need for such action. These actions included:

- Changing household practices

*I certainly do not use as many plastic bags and I am very careful about what goes down our drains. (TV)*

*More thoughtful about rubbish and fishing tackle (AQ)*

- Changing purchasing practices

*I refuse to buy anything Japanese until they stop their senseless slaughter of whales. (WW)*

*I am more aware of the ingredients of things I buy and would avoid, where I can, products that would contribute to harming whales. (WW)*

- Taking responsibility for the environment beyond the home

*Not that I littered before, but it has made me more aware of what other people are doing and I often pick up after them. (AQ)*

*When I went to visit Turtle Island National Park off the coast of Sabah, Borneo, I was shocked that some of their gorgeous beaches (where the turtles come up to lay) were covered in plastic bags and rubbish! So me and a friend spent hours cleaning bags in an effort to prevent the local turtles from possibly ingesting them. (TV)*

- Seeking further information

*More of an interest in whales now, e.g., looking for information on the internet and watching programmes. (WW)*

- Discussing environmental issues

*Recycling, composting – my daughter has been really big into ensuring we are not wasting and we talk a lot about what may be in the ocean that can hurt all the sea creatures. (TV)*

*Although I don't have a boat I remind friends that do to check that the paint that they are using on the keels is environmentally friendly. (AQ)*

- Volunteering for environmental causes

*I feel more strongly about it now that I have experienced this. I am more likely to contribute to turtle conservation through volunteering or further research. (TV)*

Some visitors indicated that the wildlife tourism experience had caused them to reflect on their own role in relation to conservation and to take more personal responsibility than they had previously accepted:

*I felt I was actually part of it, that it actually was something that I could influence. I have always been interested in conservation, but saw it as a remote concept that as a person in Brisbane, I had very little influence over. (TV)*

*I never used to think about the effects of climate change or global warming. Why would I? I never have much interaction with it. But now, for several reasons, I understand a little more and find myself wondering what little things I can do to help. (AQ)*

A number of other visitors may have been interested and willing to take action as a result of their experience, but were not aware of the actions they could take. This was particularly the case for those who lived long distances from the marine habitats of the animals they had encountered:

*I do not really see any difference I can make in whale conservation in my 'normal life', but I would like to do more if possible. (WW)*

*I don't really have a role as I live in the outback, far from turtles. (TV)*

### **3.5 Response frequencies**

The percentages of visitors at each site who showed evidence of each of the four themes (sensory impressions, emotional affinity, reflective response and behavioural response) are reported in Table 2. This analysis suggests that:

- (a) whale watching was the most likely to create lasting sensory impressions and the marine theme park was the least likely,
- (b) whale watching inspired the most emotional affinity and the aquarium the least; and
- (c) visitors to the marine theme park were the least likely to develop new insights through reflection on their experience.

Some possible reasons for these findings might be suggested from the qualitative analysis presented above. Because the whale watching tours were able to provide opportunities for close and personal interaction with mammals in their natural habitat, as well as the element of thrill (Reynolds & Braithwaite, 2001), they had a sensory and emotional impact on the majority of respondents (over 60%). The marine theme park also provided the opportunity to observe mammals (in captivity). The impacts here, however, were less pronounced. Most visitors to the aquarium did not report an emotional response, but did demonstrate evidence of having reflected on what they saw and heard. As one visitor explained, *“It’s a quiet spot that allows for reflection”*.

Insert Table 2 about here

There were no significant differences according to age group. Females were more likely than males to give responses in the “emotional affinity” category,  $\chi^2 (1, N = 233) = 4.751, p = .029$ . First-time visitors were more likely than repeat visitors to give responses in the “sensory impressions” category,  $\chi^2 (1, N = 240) = 10.601, p = .001$ . These results are not surprising, but do contribute to our confidence in the validity of the coded data.

#### **4. Discussion**

Analysis of visitors’ memories of their wildlife tourism experiences, approximately four months after the event, has shed light on factors that facilitate visitors’ progress from experience to environmental action. Four levels of response were identified that reflect visitors’ movement from what they actually saw and heard (Sensory Impressions), through what they felt (Emotional Affinity) and thought (Reflective Response), to what they did about it (Behavioural Response).

The vividness of visitors’ sensory impressions, as recalled four months after the event, suggests a similarity with the so-called “flashbulb” memories (Brown and Kulik, 1977) that are formed during events of personal, national or international significance. The photographic quality of these memories is usually attributed to the emotional content of the event. In the context of wildlife tourism, experiencing a sense of wonder, awe, excitement and privilege appeared to contribute to visitors’ emotional arousal, thus producing vivid and enduring memories. Zeppel & Muloin (2007), in reviewing the psychological benefits of marine wildlife experiences, also refer to the aesthetic and emotional aspects as being fundamental in visitors’ responses to the marine wildlife experience. Anderson and Shimizu (2007), in their study of people’s memories of World Expositions some decades after the event, provide evidence that long-lasting vivid memories may be formed if memory episodes are associated with strong emotion at the time they occur.

It is known that emotions often prompt curiosity and exploration (Berlyne, 1960; Csikszentmihalyi & Hermanson, 1995) and can lead to greater concentration and willingness to learn (Krapp, Hidi & Renninger, 1992; Pekrun, 1992). In the context of wildlife tourism, the emotional experience provoked deeper thought, leading to a concern and respect not only for the specific individuals encountered in the wildlife

tourism experience, but the species as a whole. This was particularly the case when visitors could actually witness the animals' struggles to survive, or when the information provided by commentaries or signage focussed on the threats posed by human actions.

Overall, almost half of the respondents displayed evidence that they had reflected on, or cognitively processed, the implications of what they had seen or heard. In some cases, such reflection occurred as a natural response to what people were seeing or feeling. In other cases, reflection was facilitated by the information and interpretation offered as part of the experience. Zeppel & Muloin (2007) argue that "the benefits for participants on marine wildlife tours are realized when the affective (emotional) benefits and excitement of seeing unique marine life are integrated with the cognitive (education) benefits of learning new facts about marine wildlife" (p40). The findings of our study support this conclusion, but suggest that more is needed than a presentation of "facts about marine wildlife". Visitors need to be encouraged to think deeply about what they have seen and heard and to make a personal response. This would be most appropriate during the post-contact stage, which according to Forestell and Kaufman (cited by Lück, 2007), is a time of "personal validation" when visitors can make connections between the wildlife they have just encountered and broader environmental issues.

For some visitors, social interactions during or after the visit may facilitate this process of reflection. Kals et al. (1999) noted that "the sharing of experiences with significant others may function as an amplifier of the impact of stays in nature" (p 182). Anderson and Shimizu (2007) suggested that discussion and reflection on an experience perform a similar function to rehearsal and thus lead to more detailed and vivid memories. Social facilitation is particularly important within families, as children and parents are likely to have a strong and mutual influence upon each other's environmental behaviour (Ballantyne, Fien and Packer, 2001).

Many visitors were able to recall the information they had been given about human impacts on wildlife, and practical things they could do to make a positive difference. Research reported by Ballantyne, Packer and Hughes (2009) confirms that wildlife tourists are open to receive these kinds of messages, and are particularly interested in practical information about what they can do to help protect the wildlife. Visitors need to be convinced that they *can* make a difference, and need to be provided with a range of simple and achievable actions they can take in this regard.

The hierarchy of responses identified in this study is reminiscent of Kolb's (1984) Experiential Learning Cycle (see Figure 1). This is not surprising given that learning in this context is best understood as experiential learning. Kolb's theory suggests that there are four stages in the experiential learning cycle: **Concrete Experience** provides a basis for **Reflective Observation**, which elicits the personal meaning of the experience. This may then be followed by **Abstract Conceptualisation**, where new concepts are formed. These are developed into implications for action, through which a change is made in a process of **Active Experimentation**, and this in turn leads to the next **Concrete Experience**. In simpler terms, this is a cycle of experiencing, reflecting, thinking and acting.

Insert Figure 1 here

The importance of reflection in the process of developing a behavioural response to the wildlife tourism experience has also been confirmed in the quantitative component of the larger study of which this is part (Ballantyne, Packer & Falk, 2010). The extent to which visitors reported having engaged in reflection during the experience was one of a few variables that were predictive of short- and long-term learning. Its emergence here as a key theme in visitors' memories of and responses to their experiences adds further weight to this finding and demonstrates its important place in moving visitors from experience to environmental action. Visitors' responses provide practical examples of how reflection might be facilitated as part of the wildlife tourism experience (see tourism management implications below).

Interesting differences were detected among sites included in this study, suggesting that these sites have different strengths and weaknesses in relation to facilitating a behavioural response. Artificial attractions, where the animals are brought into a human environment, can capitalise on the opportunity to observe animals at close range, from new and different perspectives, and to share the experience with family or friends. Specialist animal-watching experiences, where humans venture into the animals' environment, can capitalise on the sense of privilege and awe that people feel when approached by animals in their natural habitat, and the opportunity to see first hand the effects of human impact. Both types of wildlife tourism experience have the potential to evoke powerful memories and make a lasting and life-changing impression on their visitors. In both types of experience, mammals played a particularly important role in creating a sense of relationship between human and wildlife which made environmental issues more personal and relevant, and behavioural responses more likely.

## **5. Conclusion and tourism management implications**

The aim of this exploratory research was to identify aspects of the wildlife tourism experience that appear to contribute to the impact of the experience, and ultimately, to visitors' adoption of new environmental behaviours. It used an inductive qualitative analysis to deconstruct the process through which such impacts might occur. Further quantitative research is necessary to confirm and test the generalisability of these findings.

This study provides important insights for wildlife tourism managers and interpreters wishing to provide experiences for visitors that have a transformative outcome. The findings suggest that, in order to evoke powerful memories, enhance the visitor experience, and encourage visitors to adopt environmentally responsible behaviours in response to their visit, wildlife tourism managers and environmental interpreters should:

- Design interpretive experiences that incorporate multiple senses – especially, sight, sound, smell and touch;
- Provide opportunities for visitors to get as close as possible to the animals (without compromising the animals' well-being) or see the animals from a new and different perspective;
- Use interpretive commentaries and signage to reinforce visitor's sense of wonder, awe, excitement and privilege;

- If possible within the bounds of safety, allow animals freedom to approach visitors, and use this to enhance visitors' sense of privilege;
- Encourage visitors to use their imaginations to enter into the animals' world, to identify with individual animals and to experience empathy;
- Provide information about the dangers faced by the animals being observed, especially dangers due to human actions;
- Give examples of how visitors' everyday behaviours can impact both positively and negatively on the animals being observed, and wildlife in general;
- Give examples of practical and achievable things that individuals can do to contribute to the welfare of the animals being observed, wildlife in general, and their own local environment;
- Set aside a time and space for visitors to reflect on the meaning of the experience, and to interact with companions or family members;
- Ensure that staff or volunteer guides are available to answer visitors' questions and initiate conversations;
- Encourage visitors to spend some time in the days or weeks after the visit to reflect on or discuss their responses to the experience; and
- Provide resources that visitors can access after the visit to follow up particular interests, extend their learning and maintain their motivation to act.

As argued elsewhere (Ballantyne & Packer, 2010) it is unrealistic to expect that the full cycle of experiential learning (experiencing, reflecting, thinking and acting) could be completed during the visit itself. Ideally, visitors need to be supported and encouraged to continue this process after their visit, in the context of their home environment and everyday lives. In order to achieve lasting and effective behaviour change, strategies are required that prompt and remind people about desired behaviours at the time and place the behaviour needs to be enacted (McKenzie-Mohr and Smith, 1999). It is thus recommended that the providers of wildlife tourism experiences should consider using web-based technologies and social networking to maintain contact with visitors after they leave the site (Ballantyne & Packer, 2010). The wildlife tourism experience can thus draw attention to the issues and provide visitors with a reason to care, while post-visit action resources can encourage visitors to further process their experience (both cognitively and affectively); model behavioural responses and explain the positive impact of such responses on the environment; and empower visitors to take informed action in their everyday lives.

This research has clearly demonstrated the power of wildlife to evoke lasting memories and transformative experiences. Wildlife tourism managers thus have an enormous opportunity and responsibility to make best use of this resource. This research has revealed important elements of the wildlife tourism experience that need to be maintained and developed in order to build on the natural impact of contact with wildlife and encourage visitors to adopt more environmentally responsible behaviours in their everyday lives. By capitalising on the emotional affinity between visitors and the animals they are observing, encouraging a reflective response to the experience, and providing suggestions for manageable but meaningful behavioural responses that visitors could make, wildlife tourism managers and environmental interpreters can provide the conditions that are most likely to result in long-term behavioural change.

These strategies will not only contribute to the sustainability of the wildlife tourism industry, but also build community capacity for sustainable living, thus making a positive difference to our changing environment.

## 6. References

- Anderson, D. (2003) Visitors' Long-term Memories of World Expositions. *Curator The Museum Journal* 46(4): 401-420.
- Anderson, D. and Shimizu, H. (2007). Factors shaping vividness of memory episodes: Visitors' long-term memories of the 1970 Japan World Exposition. *Memory*, 15 (2), 177-191.
- Ballantyne, R., Fien, J., and Packer, J. (2001). Intergenerational influence in environmental education: a quantitative analysis. *Australian Journal of Environmental Education*, 17: 1-7.
- Ballantyne, R. and Packer, J. (2009). Future directions for research in free-choice environmental learning in Falk, J.; Heimlich, J., and Foutz, S. (eds) *Free-choice learning and the environment*. Lanham, MD: AltaMira Press.
- Ballantyne, R. and Packer, J. (2010). Using tourism free-choice learning experiences to promote environmentally sustainable behaviour: the role of post-visit 'action resources'. Paper under review.
- Ballantyne, R., Packer, J. and Falk, J. (2010) Visitors' learning for environmental sustainability: testing short- and long-term impacts of wildlife tourism experiences using structural equation modelling. Paper under review.
- Ballantyne, R., J. Packer, and K. Hughes. (2009). Tourists' support for conservation messages and sustainable management practices in wildlife tourism experiences. *Tourism Management* 30, 658-664.
- Ballantyne, R., Packer, J., Hughes, K., and Dierking, L. (2007). Conservation learning in wildlife tourism settings: lessons from research in zoos and aquariums. *Environmental Education Research*, 13 (3), 367-383.
- Bentrupperbäumer, J. (2005) Human Dimension of Wildlife Interactions in Newsome, D., Dowling, R. and Moore, S. *Wildlife Tourism* pp.82-112. Clevedon England: Channel View Publications.
- Berlyne, D. E. (1960). *Conflict, arousal, and curiosity*. New York: McGraw-Hill.
- Brown, R., & Kulik, J. (1977). Flashbulb memories. *Cognition* 5: 73-99.
- Buckley, R. (2002) Tourism and Biodiversity in North and South. *Tourism Recreation Research* 27(1): 43-51.
- Cater, E. and Goodall, B. (1992) Must Tourism Destroy its Resource Base? In Mannion, A.M. and Bowlby, S.R. (eds) *Environmental Issues in the 1990s* (pp.309-323). Chichester and New York: John Wiley and Sons.
- Constantine, R. & Bejder, L. (2007). Managing the whale- and dolphin-watching industry: Time for a paradigm shift. In J. Higham & M. Lück (Eds) *Marine wildlife and tourism management: Insights from the natural and social sciences*, pp. 321-333. Wallingford, Oxfordshire: CABI.
- Csikszentmihalyi, M., & Hermanson, K. (1995). Intrinsic motivation in museums: Why does one want to learn? In J. H. Falk & L. D. Dierking (Eds.), *Public Institutions for personal learning: Establishing a research agenda* (pp. 67-77). Washington DC: American Association of Museums, Technical Information Service.

- Curtin, S. (2005) Nature, Wild Animals and Tourism: An Experiential View. *Journal of Ecotourism* 4(1): 1-15
- Duffy, R. (2002) *A Trip Too Far: Ecotourism, Politics and Exploitations*. London: Earthscan Publications Ltd.
- Falk, J. and Dierking, L. (1997) School field trips: Assessing their long-term impact. *Curator: The Museum Journal* 40(3): 211-218.
- Falk, J. and Dierking, L. (2000) *Learning from Museums: Visitor Experience and the Making of Meaning*. California: Alta Mira.
- Fennell, D. (1999) *Ecotourism: An Introduction*. London: Routledge.
- Forestell, P. (1993) If Leviathan has a Face, Does Gaia have a Soul? Incorporating Environmental Education in Marine Eco-tourism Programs. *Ocean and Coastal Management* 20: 267-282.
- Goodwin, H., Kent, I., Parker, K. and Walpole, M. (1998) Tourism, Conservation and Sustainable Development. IIED Wildlife and Development Series no 12.
- Green, R.J. and Giese, M. (2004) Negative effects of Wildlife Tourism on Wildlife. In Higginbottom, K. (ed) *Wildlife Tourism: Impacts, Management and Planning* (pp.81-97). Australia: Common Ground Publishing in association with the Cooperative Research Centre for Sustainable Tourism.
- Green, R.J. and Higginbottom, K. (2001) *Negative Effects of Wildlife Tourism on Wildlife*. Wildlife Tourism Research Report No. 5, Status Assessment of Wildlife Tourism in Australia Series, CRC for Sustainable Tourism, Gold Coast, Queensland.
- Higginbottom, K. (2004) Wildlife Tourism: An Introduction in Higginbottom, K. (ed) *Wildlife Tourism: Impacts, Management and Planning* (pp.1-14). Australia: Common Ground Publishing in association with the Cooperative Research Centre for Sustainable Tourism.
- Higginbottom, K., Northrope, C.L. and Green, R.J. (2001) *Positive Effects of Wildlife Tourism on Wildlife*. Wildlife Tourism Research Report No. 6, Status Assessment of Wildlife Tourism in Australia Series, CRC for Sustainable Tourism, Gold Coast, Queensland.
- Holden, A. (2000) *Environment and Tourism*. London: Routledge.
- Honey, M. (1999) *Ecotourism and Sustainable Development*. Washington: Island Press.
- Kals, E., Schumacher, D. and Montada, L. (1999) Emotional affinity towards nature as a motivational basis to protect nature. *Environment and Behavior* 31: 178-202. Available [online] <http://eab.sagepub.com/cgi/content/abstract/31/2/178>, accessed 20/02/2008.
- Knight, R.L. and Cole, D.N. (1995). Wildlife responses to rerecreationists. In R.L. Knight & K.J. Gutzwiller (Eds). *Wildlife and recreationists: Coexistence through management and research*, pp. 51-69. Washington DC: Island Press.
- Koeman, A., Worboys, G., De Lacy, T., Scott, A. and Lipman, G. (2002) Green Globe: A Global Environmental Certification Program for Travel and Tourism. In Honey, M. (ed) *Ecotourism and Certification*, pp. 299-324. Washington: Island Press.
- Kolb, D. A. (1984). *Experiential Learning: experience as the source of learning and development*. New Jersey: Prentice-Hall.
- Krapp, A., Hidi, S., & Renninger, K. A. (1992). Interest, learning, and development. In K. A. Renninger, S. Hidi, & A. Krapp (Eds.), *The role of interest in learning and*

- development* (pp. 3-25). Hillsdale, NJ: Lawrence Erlbaum Assoc.
- Lee, W.H. and Moscardo, G. (2005) Understanding the Impact of Ecotourism Resort Experiences on Tourists' environmental Attitudes and Behavioural Intentions. *Journal of Sustainable Tourism* 13(6): 546-565.
- Lück, M. (2007). Managing marine wildlife experiences: The role of visitor interpretation programmes. In J. Higham & M. Lück (Eds) *Marine wildlife and tourism management: Insights from the natural and social sciences*, pp. 334-346. Wallingford, Oxfordshire: CABI.
- Marion, J. and Reid, (2007) Minimising visitor impacts to protected areas: The efficacy of low impact education programmes. *Journal of Sustainable Tourism* 15(1): 5-27.
- McKenzie-Mohr, D., and W. Smith. 1999. *Fostering sustainable behaviour: An introduction to community-based social marketing*. Gabriola Island, BC, Canada: New Society Publishers.
- McManus, P. (1993) Memories as indicators of the impact of museum visits. *Museum Management and Curatorship* 12: 367-380.
- Medio, D., Ormond, R.F.G., and Pearson, M. (1997) Effect of Briefings on Rates of Damage to Corals by SCUBA Divers. *Biological Conservation* 79: 91-95.
- Medved, M.I. and Oatley, A. (2000) Memories and Scientific Literacy: remembering exhibits from a science centre. *International Journal of Science Education* 22(10): 1117-1132.
- Moscardo, G. and Saltzer, R. (2004) Understanding Wildlife Tourism Markets in Higginbottom, K. (ed) *Wildlife Tourism: Impacts, Management and Planning* (pp.167-186). Common Ground Publishing Pty Ltd and Cooperative Research Centre for Sustainable Tourism.
- Orams, M.B. and Hill, G. (1998) Controlling the ecotourist in a wild dolphin feeding program: Is education the answer? *The Journal of Environmental Education* 29(3): 33-38.
- Pekrun, R. (1992). The impact of emotions on learning and achievement: Towards a theory of cognitive/motivational mediators. *Applied Psychology: An International Review*, 41 (4): 359-376.
- Powell, R.B. and Ham, S.H. (2008). Can ecotourism interpretation really lead to pro-conservation knowledge, attitudes and behavior? Evidence from the Galapagos Islands. *Journal of Sustainable Tourism* 16 (4): 467-489.
- Reynolds, P.C. and Braithwaite, D. (2001). Towards a conceptual framework for wildlife tourism. *Tourism Management*, 22 (1): 31-42.
- Ritchie, B.W. with Carr, N. and Cooper, C. (2003) *Managing Educational Tourism*. Clevedon England: Channel View Publications.
- Schänzel, H.A. and McIntosh, A.J. (2000) An Insight into the Personal and Emotive Context of Wildlife Viewing at the Penguin Place, Otago Peninsula, New Zealand. *Journal of Sustainable Tourism* 8(1): 36-52.
- Secretariat of the Convention on Biological Diversity (2004) *Guidelines on Biodiversity and Tourism Development*. Montreal: Secretariat of the Convention on Biological Diversity.
- Sharpley, R. (2000) Tourism and Sustainable Development: Exploring the Theoretical Divide. *Journal of Sustainable Tourism* 8(1):1-19.
- Smith, V. and Eadington, W.R. (1992) *Tourism Alternatives: Potentials and Problems in the Development of Tourism*. Philadelphia :University of Pennsylvania Press.

- Tisdell, C. and Wilson, C. (2005) Perceived Impacts of Ecotourism on Environmental Learning and Conservation: Turtle watching as a case study. *Environment, Development and Sustainability* 7: 291-302.
- Wells, M.P. (1997) *Economic Perspectives on Nature Tourism, Conservation and Development*. Paper no. 55 Environmental Economic Series. USA: Pollution and Environmental Economics Division, World Bank.
- Wilson, C. and Tisdell, C. (2001) Sea turtles as a non-consumptive tourism resource especially in Australia. *Tourism Management* 22: 279-288.
- World Tourism Organization (2000) *Sustainable Development of Tourism - A Compilation of Good Practices*. Madrid: WTO.
- Zeppel, H. & Muloin, S. (2007). Marine wildlife tours: Benefits for participants. In J. Higham & M. Lück (Eds) *Marine wildlife and tourism management: Insights from the natural and social sciences*, pp. 19-48. Wallingford, Oxfordshire: CABI.

Table 1. Demographic characteristics of the sample

	Non-captive wildlife experiences		Captive wildlife experiences		Total
	Turtle viewing	Whale watching	Aquarium	Marine theme park	
Total participants	110	42	30	58	240
Gender:					
% male	31	29	43	29	32
% female	69	71	57	71	68
Age:					
% Under 30	36	24	20	17	27
% 30-49	46	33	53	74	52
% Over 50	19	43	27	9	22
% first visit	84	95	53	40	71
% repeat visit	16	5	47	60	29

Table 2. Percentages of visitors at each site who responded at each level

	Non-captive wildlife experiences		Captive wildlife experiences		Total
	Turtle viewing	Whale watching	Aquarium	Marine theme park	
Sensory impressions*** $\chi^2 (3, N = 20) = 29.703, p < .001$	64%	74%	37%	31%	54%
Emotional affinity*** $\chi^2 (3, N = 240) = 24.590, p < .001$	29%	62%	17%	21%	31%
Reflective response* $\chi^2 (3, N = 240) = 9.995, p = .019$	41%	50%	57%	26%	41%
Behavioural response	13%	21%	23%	14%	16%

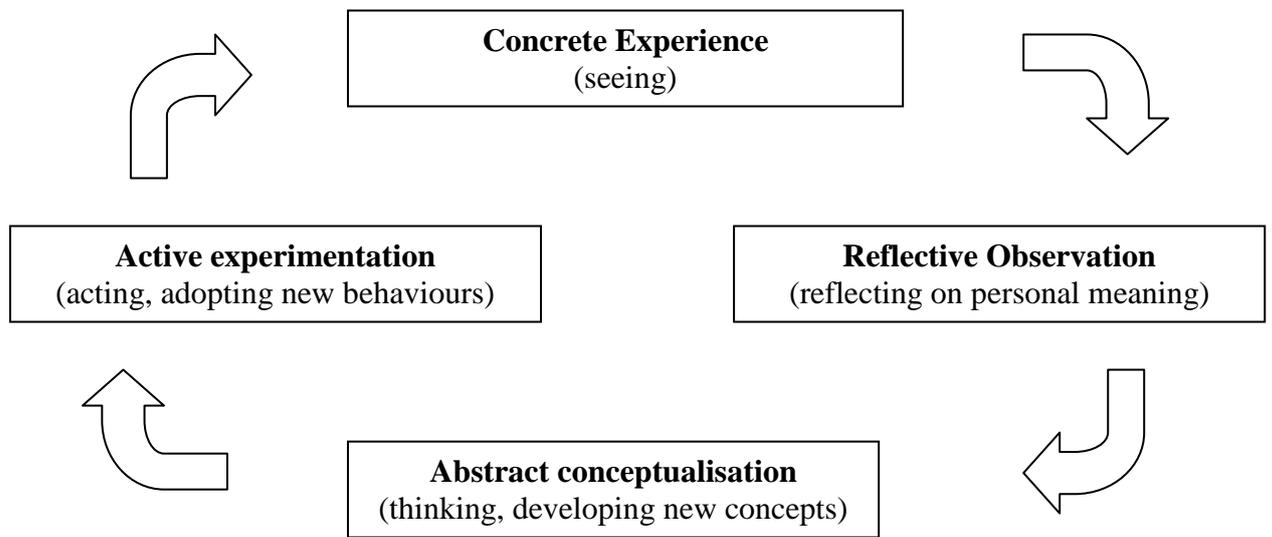


Figure 1. Kolb's (1984) Experiential Learning Cycle