

**The experience of shark diving in Pacific Harbour, Fiji:  
who goes and how important is education and interpretation?**

**Roberto Donato Altobelli**

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Primary Supervisor: Dr Michael Lück**

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## Abbreviations

AD	Anno Domini
ANOVA	Analysis of Variance
AUT	Auckland University of Technology
AUTEC	Auckland University of Technology Ethics Committee
EEZ	exclusive economic zones
GDP	gross domestic product
IUCN	International Union for Conservation of Nature
LRMR	Lake Reef Marine Reserve
MBSR	mindfulness-based stress reduction
NAUI	National Association of Underwater Instructors
NZTRI	New Zealand Tourism Research Institute
<i>O1</i>	Operator One
<i>O2</i>	Operator Two
<i>O3</i>	Operator Three
PADI	Professional Association of Diving Instructors
SCUBA	self-contained underwater breathing apparatus
SPSS	Statistical Product and Service Solutions
SRMR	Shark Reef Marine Reserve
TIES	The International Ecotourism Society
TIME	<i>Tourism in Marine Environments</i>
UK	United Kingdom
US	United States

# Declaration of Authorship

*“I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person, nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.”*

A handwritten signature in black ink, appearing to read 'R. Altobelli'.

**Roberto D. Altobelli**

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## **Abstract**

The idea of interacting with predatory sharks in their natural environment may have caused a great deal of apprehension twenty years ago. Recent changes in perceptions towards predatory sharks, especially among the scuba diving community, along with increasing worldwide accessibility enabling interaction with these animals, have led to a growing popularity in the activity of shark diving.

There are many destinations around the globe, ranging from the United States (US), South Africa and Australia to, more recently, Fiji, where paying clients can participate in tours that take them beneath the surface of the sea to view a variety of shark species. The emergence of shark diving has also attracted the attention of academic researchers in tourism. Studies have begun addressing some issues surrounding this activity but few have focused on the concepts of education and interpretation or on gaining greater knowledge about the participants on shark diving tours.

This study set out to achieve two main aims. The first aim was to gain insights into individuals participating in the activity of shark diving in Beqa Lagoon, Fiji and on a live-aboard ship operating out of Lautoka, Fiji. An overview of the study's respondents is developed by exploring a variety of demographic and psychographic characteristics. The second aim was to examine the role of education and interpretation within the context of shark diving by measuring various aspects such as respondents' overall satisfaction with on-tour interpretation, the importance of learning, and visitors' recommendations for improving the educational efforts of the operators. Particular attention is paid in this thesis to the Theory of Mindfulness and Orams' Interpretation Model, and their relevance within the context of shark diving.

The main data-collection tools used in this study were a review of relevant literature, and on-tour (paper and pen) and follow-up (on-line) questionnaires. Interviews with shark dive operators, and conversations with and observations of divers and operators were also used, but to a lesser extent. The on-tour questionnaires were administered during the period from 29 February 2008 to 11 October 2008. Follow-up on-line questionnaires were administered three months after respondents completed their on-tour questionnaire. The follow-up phase ran from 1 July 2008 to 27 February 2009.

The majority of respondents in this study were young, well-educated professionals and above-average earners; they came from a variety of countries around the world. The respondents valued learning highly and felt strongly about having on-tour educational information provided to them, which was available on-site but not always being effectively communicated by the operators. Being exposed to sharks in their natural environment had a profound impact on these divers, especially on their learning. The survey results, however, indicated that developing a formally structured educational programme, although important, is not absolutely critical to this type of wildlife tourism. Even so, the respondents indicated that they would like more educational information from the operators. By ensuring a shark diving environment which is educational and conducive to learning, operators increase the likelihood of divers having the best possible shark diving experience, which potentially translates into benefits for operators, divers and sharks.

This thesis will contribute to the small but growing body of literature on shark tourism as well as to the larger body of literature on wildlife tourism. The first main contribution of this thesis is combining Orams' Interpretation Model with the Theory of Mindfulness within the context of shark diving, and the newly adapted Interpretation Model for Shark Diving demonstrates how these two constructs fit together. The second main contribution is the methodological technique of surveying the same respondents twice: first on tour, immediately following their shark diving trip, and then three months post tour. The third main contribution of this thesis is the development of the Shark Diving Experience Model which illustrates the impact of being exposed to sharks in their natural environment.

## **CHAPTER 1 — Introduction**

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### **1.1 The global ocean, sharks and rationale for this study**

Due to its immense depth, the ocean makes up an enormous percentage of the living space on the planet (Mitchell, 2009). More than seven-tenths of the earth's surface is comprised of water (Mitchell, 2009). The ocean, which is home to millions of species and plays a vital role in regulating global ecological balance, makes life on earth possible and its health and protection are of critical importance (Earle, 2009). Earle (2009) argues that human activities in the last two centuries have caused considerable damage to ocean ecosystems.

Stewart (2007a), who has travelled the world photographing various ocean ecosystems, depicts the underwater world as a vast and beautiful place full of a rich diversity of wildlife. He argues that this environment is being severely threatened. Some of the more destructive human practices include the removal and waste of millions of tons of ocean wildlife annually, especially due to destructive fishing techniques such as bottom trawling and long-lining, the destruction of coral reefs, and the dumping of millions of tons of pollutants into the oceans each year (Stewart, 2007a).

The increasing scale of human exploitation of the ocean, coupled with evidence of species decline and population extinctions, forewarn of the increasing loss of coastal and oceanic biodiversity (Dulvy et al., 2008). One of the main culprits behind the destruction of marine ecosystems, in particular various fish species, is overfishing (AFP, 2009). Conserving and managing open-ocean biodiversity are very difficult tasks. The two main reasons for this are that the ocean ecosystems lie far from land, making it

difficult to monitor the consequences of human activities for biodiversity, and that many species primarily range in the high seas outside of countries' Exclusive Economic Zones (EEZ), beyond the remit and immediate concerns of national jurisdictions (Dulvy et al., 2008). Global marine stocks are in jeopardy due to the mounting pressure from overfishing (UN, 2004). The increasing demand for fish products has resulted in fisheries investments becoming more attractive to both large-scale entrepreneurs and governments all over the world.

Sharks, which belong to the superorder Selachimorpha in the subclass Elasmobranchii in the class Chondrichthyes, are facing a number of threats from human activities, including targeted fisheries, incidental by-catch, increases in oceanic pollution and the destruction of nursery grounds by coastal development (Dobson, 2008).

Sharks and their relatives, skates, rays and chimaeras, collectively known as Chondrichthyan fishes, form a small and, in evolutionary terms, very conservative group which has functioned successfully in diverse ecosystems for over 400 million years (Camhi, Valenti, Fordham, Fowler, & Gibson, 2009). Sharks are disappearing at an alarming rate and their very survival is in danger (la Repubblica.it, 2008). Although the status of most shark species remains uncertain (Baum, Myers, Kehler, Worm, Harley, & Doherty, 2003), some estimate that shark populations have decreased between 70% and 90% worldwide over the past 20–30 years and that more than 100 million sharks are killed each year in fisheries (Dobson, 2008; Stewart, 2007a; The Shark Alliance, 2006; Topelko & Dearden, 2005).

One of the main reasons fisheries target sharks is for their fins (Clarke, McAllister, & Michielsens, 2004; Clarke et al., 2006; Dulvy et al., 2008; Topelko & Dearden, 2005).

Shark fins are one of the most valuable commodities in the sea; sets of fins can sell for more than US\$700/kg (Shark Trust, 2011). Shark fins are highly valued because of the burgeoning demand for the delicacy of ‘shark fin soup’ (Dulvy et al., 2008). In many Asian cultures, shark fin soup represents a symbol of wealth and respect and has become an ubiquitous dish at weddings, banquets and business dinners (Stewart, 2007a). Shark fins are being sourced globally through market channels concentrated mainly in a handful of Asian trading centres, Hong Kong being the largest (Clarke et al., 2006). Regardless of the reasons for targeting sharks, the statistics show their populations appear to be depleting at a staggering rate.

Sharks are often viewed as dangerous, non-human ‘man-eaters’, especially in Western society (Dobson, 2008, 2007). According to a study conducted by Woods (2000), in which respondents were asked to list their preferences for animals in Australia, sharks ranked rather low on a list of ‘favourite’ animals and quite high on a list of ‘least favourite’ animals. These preferences are further affirmed by reports in the media, in particular newspaper articles. One example is an article in the *New Zealand Herald* about great white sharks (*Carcharodon carcharias*) being the most fearsome creatures since dinosaurs (Ansley, 2008). An article in *TIME* magazine depicts sharks as dangerous bloodthirsty killers (Morrissey, 2008). This article reported on a diver who died from a shark bite while participating in a swimming-with-sharks operation in the Bahamas, and concluded that due to dangers surrounding sharks, perhaps the best way to see them up close is in an aquarium. These articles show that simply getting the story out appears to be much more important than the integrity of reporting facts responsibly. Regardless of how they are depicted, sharks have been receiving much attention within the past few years (e.g. Fisher, 2008; Koubaridis & Vass, 2008; McAvoy, 2009; The Associated Press, 2008).

Some authors argue that a way of helping to dispel myths about sharks created by media sources over the years is through wildlife tourism, and more specifically, shark tourism (Dobson, 2007). Wildlife tourism is a form of tourism which is based on encounters with non-domesticated animals (Higginbottom, 2004). These encounters may occur in the animal's natural environment or in captivity. Activities in wildlife tourism settings include viewing, photographing and feeding, as well as those that involve killing or capturing animals, for instance hunting and recreational fishing. The main forms of wildlife tourism include wildlife-watching tourism, captive wildlife tourism, hunting tourism and fishing tourism (Higginbottom, 2004).

Dearden, Topelko, and Ziegler (2008) contend that shark watching provides individuals with incentives for conservation and an opportunity to increase awareness about the ocean environment. Others argue that wildlife tourism is a potential tool for the conservation of sharks due to its ability to raise awareness and educate tourists, enhance local economic benefits, provide a platform for scientific research and carry out lobbying activities (Dobson, 2008; Tisdell & Wilson, 2001; Higginbottom, Tribe & Booth, 2003). Dobson (2008) contends that exposing the public to sharks is probably one of the greatest contributions that wildlife tourism can make towards the conservation of sharks. Stewart (2007a) believes that sharks are essential for life in the seas and they deserve protection. If tourism can be seen as a route to helping protect sharks, even if on a small scale, then it may be one worth pursuing and one worth researching.

There are those, however, who are concerned about possible negative impacts that shark tourism may have on both sharks and humans (e.g. Clarke, Lea & Ormond, 2011; Clua, Buray, Legendre, Mourier & Planes, 2011, 2010; Cubero-Pardo, Herrón & González-

Pérez, 2011; Fitzpatrick, Abrantes, Seymour & Barnett, 2011; Clua, 2010; Smith, Scarr & Scarpaci, 2010; Guttridge, Myrberg, Porcher, Sims & Krause, 2009; Knight, 2009). Some claim that the potentially negative effects of this type of tourism, especially due to provisioning or shark-feeding, include altering the natural behaviour patterns of sharks, generating biological and ecological effects, causing habituation to human contact and increase aggression towards humans by associating divers with food, and the likelihood of sharks favouring inbreeding due to large numbers aggregating in one spot (Clua et al., 2010). However, these claims have yet to be scientifically proven and to date little is known about the true impacts that shark tourism has on sharks and thus future research in this area is required (Clarke et al., 2011; Fitzpatrick et al., 2011; Maljković & Côté, 2011; Clua et al., 2010; Smith et al., 2010; Vignon, Sasal, Johnson & Galzin, 2010; Guttridge et al., 2009).

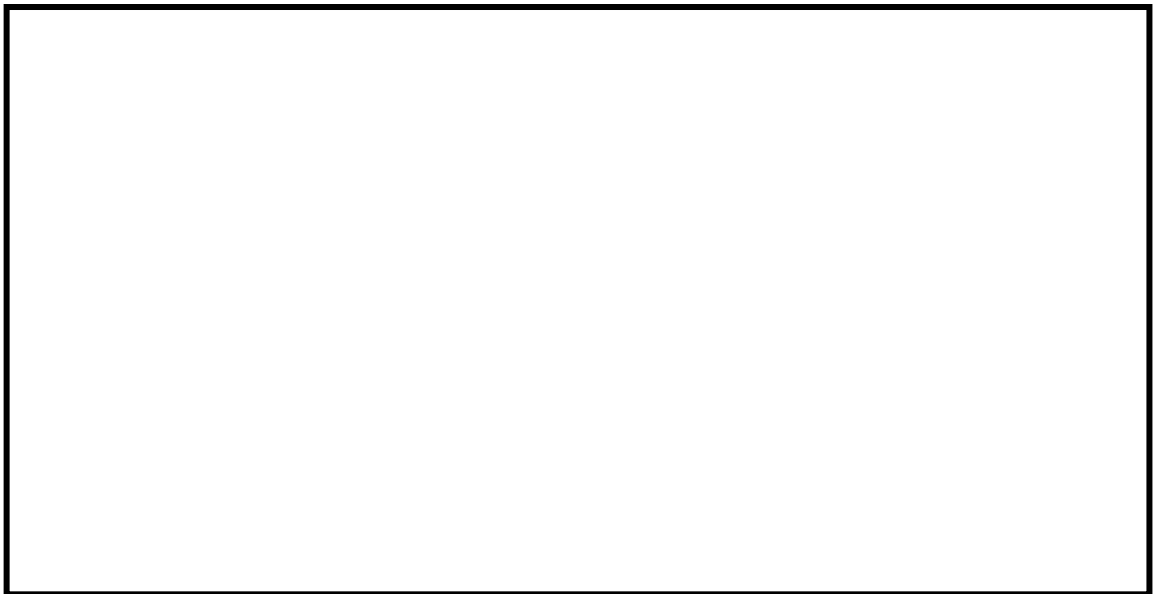
One of the main reasons for undertaking this research is to examine various aspects within the under-explored area of shark diving by obtaining first hand perspectives of the very individuals who participate in this activity. Moreover, the current plight of sharks as well as the controversial nature of shark diving, as described above, makes researching this activity interesting, relevant and timely. The goal of this study is to explore a wide variety of perspectives and in so doing shed light onto various topics ranging from the way sharks are viewed to the importance of learning and education when on a shark diving trip. By doing so, this study intends to make significant contributions to the knowledge base in the area of shark tourism.

## 1.2 Research context

The use of sharks for tourism purposes has received little attention from academic researchers. This thesis explores shark tourism by looking at the specific case of shark diving in the Beqa Lagoon, Fiji.

Despite an extremely challenging year in 2009, due to the global economic crisis, worldwide tourism demand steadily regained momentum in the first quarter of 2010 (World Tourism Organization, 2010). All world regions witnessed positive tourism growth during this period but among the leaders is the Asia and Pacific region, outperforming both Europe and the Americas in terms of international tourist arrivals (World Tourism Organization, 2010). Within the Asia and Pacific region lies the island nation of Fiji (see Figures 1.1 and 1.2), which, despite its downturns due to political unrest and a difficult 2009, has been witnessing overall growth in its tourism industry (Fiji Islands Bureau of Statistics, 2010b).

Figure 1.1: Location of Fiji



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Tourism is an important driving force for Fiji's economy (Narayan, 2004) and is currently its fastest growing industry in terms of employment creation and foreign-exchange earnings (Fiji High Commission, 2010). Fiji's tourism industry provides employment directly and indirectly to an estimated 45,000 people and contributes approximately 25% to the country's Gross Domestic Product (GDP) (Fiji High Commission, 2010). Some of the most popular forms of tourism activities in Fiji include scuba diving and snorkelling, kayaking, cruising and surfing (Narayan, 2000; South Pacific Tourism Organisation, 2008), underlining the importance of the marine environment to the nation's overall tourism industry.

Fiji is an archipelago which was first inhabited about three and a half thousand years ago (Fiji Government, 2003). The country comprises 320 islands, with a total land area of 18,376 square kilometres. It is located in the South Pacific 16° south of the equator and just west of the international date line (Howard, 1991) (see Figure 1.1). Fiji's population (as of July 2010) is estimated at 957,780 (CIA: *The World Fact Book*, 2010) and the majority live on the two main islands of Vanua Levu and Viti Levu, the latter being where the nation's capital, Suva, is located (Howard, 1991). More than twenty per cent of the population are concentrated around Suva, and forty per cent live in or in close proximity to urban areas (Howard, 1991). A former British colony, Fiji became a republic in 1987 following two coups d'états (Fiji Government, 2005/06). Fiji also had coups in 2000 and 2006 (Fiji Coup, 2007). The post-1987 period has been one of the most volatile in Fiji's history, with the country undergoing 15 changes in government during that time (Narayan & Prasad, 2007).

Military coups have had adverse impacts on Fiji's economy, causing a substantial decline especially in GDP and economic welfare (Narayan & Prasad, 2007). According

to the latest tourism statistics of the Fiji Islands Bureau of Statistics, coup periods show a significant drop in visitor numbers (Fiji Islands Bureau of Statistics, 2010b). For example, during the coup period from 1999 to 2000, visitor arrivals dropped from 409,955 to 294,070, and the coup period from 2006 to 2007 saw a drop in visitor arrivals from 548,589 to 539,881. Despite these times of political unrest, Fiji's tourism industry has been increasing steadily, albeit with a slight drop in 2009 due to the worldwide economic downturn (Fiji Islands Bureau of Statistics, 2010b) (see Table 1.1).

Table 1.1: Visitor arrivals to Fiji in the past fifteen years

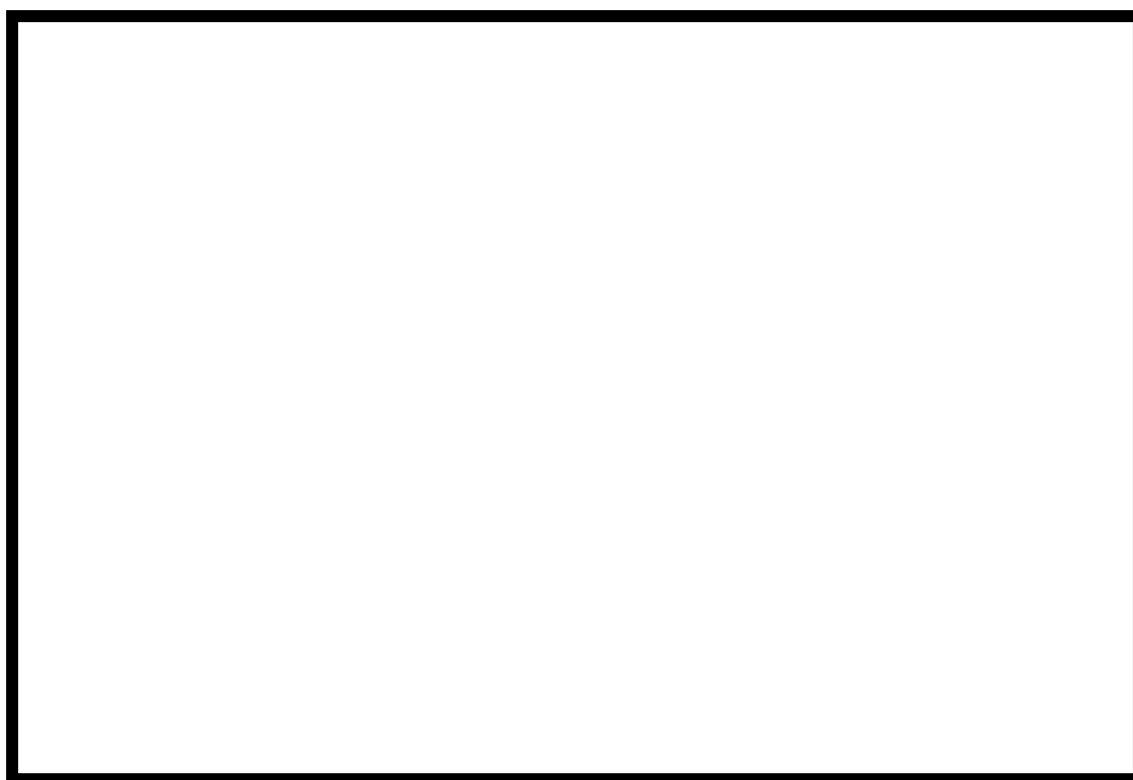

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Sharks hold a special place in the hearts of Fijians, especially for those living in the town of Pacific Harbour and around the Beqa Lagoon area (see Figure 1.2), where this study is focused. These individuals believe in the shark god *Dakuwaqa*, who agreed years ago to protect them whenever they find themselves in Fijian waters (Bula Fiji: Fiji Islands Visitor's Bureau, 2007). Even to this day local fishermen pour a bowl of *yaqona*

(the traditional and very symbolic drink of Fiji also referred to as *kava*) into the sea as an offering to *Dakuwaqa* (Bula Fiji: Fiji Islands Visitor's Bureau, 2007).

Shark tourism, in particular shark diving, has emerged as a popular activity among diving tourists worldwide (Lobel, 2008). An area in Fiji where shark diving has become particularly important is Beqa Lagoon, near the town of Pacific Harbour (see Figure 1.2).

Figure 1.2: Map of Fiji and the Beqa Lagoon area



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Pacific Harbour is located on the island of Viti Levu, 139 kilometres east of Nadi and 49 kilometres west of Suva (Fiji Pacific Harbour, 2010b), and just north of Beqa Island (Fiji Pacific Harbour, 2010a). Beqa Lagoon is an area renowned for its world-class scuba diving sites and many dive operations can be found in Pacific Harbour that offer

dive trips (including wreck, soft and hard coral, and pelagic fish dives) to the lagoon (Fiji Pacific Harbour, 2010a).

Among the most popular diving trips to Beqa Lagoon are the shark-feeding dives (Fiji Pacific Harbour, 2010a). At this destination, shark diving is based primarily on the premise of baiting and feeding fish in order to guarantee shark sightings. This practice is highly controversial, raising many concerns for both shark and human welfare, and as a consequence many are opposed to the idea (Cater, 2008; Dobson, 2008; Lobel, 2008). However, others feel that despite the controversies surrounding baiting and feeding, shark diving can be beneficial, in particular for shark species and divers participating in the activity (Johnson & Kock, 2006; Smith, 2009).

This study will examine the role of education and interpretation within the context of shark diving. Education and interpretation has been explored by authors in other areas of marine wildlife tourism (e.g. Lück, 2008a; Orams, 1998; Stamation, Croft, Shaughnessy, Waples, & Briggs, 2007; Zeppel & Muloin, 2007), but little research has been done on education and interpretation with regards to shark diving or shark tourism in general. Moreover, no research has focussed on the two constructs of the Theory of Mindfulness and Orams' (1996b) Interpretation Model and how they may potentially fit within the context of shark diving. Both have been used independently within other wildlife tourism settings (e.g. Orams, 1996b; Moscardo & Pearce, 1986; Woods & Moscardo, 2003) and these authors argue that they are potentially useful tools within these setting. This study, therefore, will focus on examining these two constructs together within the shark diving context.

Topelko and Dearden (2005) acknowledge the importance of educating shark divers. They argue that providing divers with opportunities to learn about shark biology and conservation should be incorporated within all shark-watching ventures in order to nurture a more sympathetic view of these animals. Dobson, Jones, and Botterill (2005) argue that a well-structured education programme may have the potential to instil conservation ethics within individuals participating in shark tourism. The current study also contends that providing or enhancing educational components within shark diving can be beneficial for all the stakeholders involved.

### **1.3 Aims and research questions of the study**

The two main aims of this study are:

1. To gain a better overall understanding of the characteristics of individuals participating in shark diving at the selected dive sites.
2. To examine the role of education and interpretation, with particular attention on the Theory of Mindfulness and Orams' (1996b) Interpretation Model, within the context of shark diving at the selected dive sites.

To help achieve these aims, the following three research questions were designed:

1. What are the characteristics of individuals attracted to shark diving at the selected dive sites?
2. What role does education and interpretation play within the shark diving context at the selected dive sites?
3. To what extent does on-tour education and interpretation influence tourists' behaviour once they are back in their home environment?

### **1.4 Thesis structure**

This thesis consists of eight chapters, the first being this one, the introduction. The next two chapters review literature pertinent to the overall study. Chapter Two reviews literature pertinent to the concept of education and interpretation. The chapter begins with a section on Freeman Tilden, one of the early pioneers of interpretation within

recreation settings, in order to provide a brief history on the concept of interpretation and of how his work acted as an inspiration for researchers exploring the concept within tourism settings. The subsequent two sections examine education and interpretation and the concept of learning within the tourism context, and explore relevant research conducted in these areas. An extensive review reveals that these areas are lacking in research, although there has been an increase in recent years.

The last two sections of Chapter Two provide detailed discussions on the Theory of Mindfulness (focusing mainly on the work done by Ellen Langer), including work done on this topic in the field of tourism, and Orams' Interpretation Model. Studies analysing or utilising these two theories have been quite sparse and a combination of the two has yet to be explored within tourism research. The current study combines these two constructs, and in so doing makes a significant contribution to the wildlife tourism literature.

Chapter Three reviews literature pertaining to the following interdependent areas: wildlife and marine wildlife tourism, shark tourism (and related issues such as shark-feeding), scuba diving and scuba-dive tourism, marine tourism, and marine ecotourism.

Chapter Four presents the methodological approach of the study. This chapter begins with a description of the research area and the dive operators chosen. The on-tour and follow-up (on-line) questionnaires' design and content, and their administration are all discussed along with a brief description of the interview process. The final sections discuss ethical considerations, sampling, observations and records taken on site, and data processing and analysis. This last section describes the computer programmes used

and the types of analyses performed in order to provide the results and findings presented in chapters five, six and seven.

Within the subsequent three chapters (five, six, and seven), results, analyses and discussions are presented simultaneously. Chapter Five provides an overview of the respondents in this study, describing their demographic and psychographic characteristics. Results for this chapter were taken exclusively from the on-tour questionnaire. Acknowledging the difficulties in developing an all-encompassing definition of a ‘shark tourist’, the chapter closes with a discussion on the possibility of classifying the respondents.

Chapter Six reports on data analysed exclusively from the on-tour questionnaire. The goal of this chapter is to provide insights into the on-tour phase of the shark diving experience. The respondents’ attitudes and feelings about their shark diving experience and about on-tour education and interpretation are examined. Analyses for this chapter come from a variety of questions from the on-tour questionnaire, such as overall satisfaction levels, operator effectiveness, likelihood to perform future actions, most valuable gains, satisfaction with educational information provided by the dive operator, the importance of learning on any trip, and the possible influence of anything learnt on tour on respondents’ behaviour changes once they return home.

Chapter Seven reports results and discussions from data analysed primarily from the follow-up questionnaire. Where relevant, the results from the follow-up questionnaire are compared with those from the on-tour questionnaire. The goal of this chapter is to provide insights into the post-tour phase (three months or more) of the shark diving experience. Respondents’ post-tour attitudes and feelings about their overall shark

diving experience, sharks and shark divers, and about the concept of education and interpretation are explored. Specific questions from the follow-up questionnaire used for analysis in this chapter include: post-tour feelings regarding the overall shark diving experience, present rating of the shark diving experience, intended actions actually taken, post-tour attitudes and opinions towards sharks, the importance of education, interpretation and learning on a shark diving trip, and operator effectiveness.

Chapter Eight, the final chapter of the thesis, begins by presenting the key findings and contributions of the study. It then outlines a new research agenda before concluding with the researcher's final thoughts. Some of the key findings discussed in this chapter include an overview of the study's respondents, the significance of education, interpretation and learning within the context of shark diving, and the positive impact of the experience of being exposed to sharks in their natural environment. Two models, which are major contributions of this study, are presented and examined in this chapter. Both models emerged from the findings in the study. The Interpretation Model for Shark Diving is an adaptation of Orams' Interpretation Model, and is used to demonstrate how Orams' model and the Theory of Mindfulness, particularly features in Woods and Moscardo's (2003) Mindfulness Model for Wildlife Tourism, can be useful within the context of shark diving. The Shark Diving Experience Model was newly developed to provide a visual representation of the significance of the overall shark diving experience on participants.

### 2.1 Introduction

Research has indicated that tourists, in particular ecotourists, are highly motivated by the desire for a learning experience (Packer & Ballantyne, 2004; Price, 2004). Education and interpretation programmes, however, are not always delivered in recreation or tourism settings, and of those that are provided, there is a lack of information available on their effectiveness (Madin & Fenton, 2004; Moscardo, 2007). The notion of purposely incorporating education and interpretation within tourism and recreational settings was inspired largely by the work of Freeman Tilden in the mid-1950s (Tilden, 2007). Tilden and his six fundamental principles of interpretation will be discussed in greater detail later in this chapter.

The terms education and interpretation, in the tourism context, are often used synonymously (Lück, 2003b), although subtle differences between them do exist. According to Hammitt (1984, p. 11), “environmental education often involves a formal approach to educating while environmental interpretation is almost always informal.” Environmental education aims more at educating students while interpretation aims more at educating visitors. The former usually takes place in a formalised setting such as a classroom with a captive audience, whereas the latter usually occurs in a natural setting and addresses a voluntary audience (Hammitt, 1984; Moscardo, 2008). Although these concepts do differ slightly, the fundamental aim in each case is the imparting of knowledge to an audience.

A number of authors have examined the concepts of education and interpretation within recreation and tourism settings (e.g. Forestell, 1990; Gubbay, 1989; Hockings, 1994; Knapp & Poff, 2001; Stamation et al., 2007; Tabata, 1991). In a more recent example, Lück (2008a) examined the use of interpretation programmes as tools to help manage marine wildlife experiences. Townsend (2008) explored how interpretation and environmental education can be used as conservation tools within the scuba-diving realm. Lemelin and Wiersma (2007), in their study on polar bear tourism in Churchill Manitoba, Canada, argue in favour of using education and interpretation as management strategies.

There are many opportunities for the delivery of educational information within marine wildlife tourism settings. As Zeppel and Muloin (2008a) argue, marine wildlife tourism is ripe with educational opportunities for visitors and associated spin-off benefits for conservation. These benefits are derived from close personal encounters visitors have with marine wildlife and the learning that occurs about various marine species and ocean environments. In an analysis of several studies on guided tourist encounters with whales, dolphins and marine turtles from 1996 to 2007, Zeppel and Muloin (2008a) found that tourist learning during encounters with marine wildlife contributes to pro-environmental attitudes and improved on-site behaviour changes, with some longer-term intentions to take on conservation actions, all of which benefit marine species. Zeppel and Muloin (2007) argue that personal encounters with marine wildlife linked with education programmes are more likely to generate conservation appreciation and action by visitors. Andersen and Miller (2006) contend that education is an effective tool that fosters management objectives in whale watching, and is a powerful mechanism for shaping human conduct and enhancing quality of life.

## 2.2 Freeman Tilden's contribution to the field of interpretation

When the field of heritage interpretation developed, its primary objective was to reveal meanings about natural and cultural heritage and its principal advocate was Freeman Tilden (Kohl, 2005). According to Tilden (2007, p. 17), interpretation is an “educational activity which aims to reveal meanings and relationships through the use of original objects, by first-hand experience, or by illustrative media, rather than simply to communicate factual information.”

Before becoming an interpretation advocate, Tilden served for many years as a journalist at several newspapers in the US. Later in his life (while in his mid-fifties), he decided to begin a new career. Being a conservationist at heart, Tilden was enchanted with, and began writing about, US national and state parks. He turned his attention to the area of interpretation and began by visiting scores of national park units in order to get a better understanding of their underlying philosophies (Tilden, 2007); it was at this point, fifty-three years ago, that Tilden wrote *Interpreting our heritage*. His book was written in an interpretive style, i.e. a style of communication demanding special attention to clarity, accuracy and conciseness, and sought to provide readers with the essential philosophy that underlies the art of interpretation. He outlined in his book that interpretation is about helping park visitors find more than just facts and information. He suggested that interpreters implore visitors to better understand themselves and find personal meaning and inspiration in park resources (Tilden, 2007). In order to do this, Tilden introduced the following six fundamental principles that he felt should drive all interpretive services (Tilden, 2007, pp. 34–35):

1. Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile.
2. Information, as such, is not interpretation. Interpretation is revelation based upon information. But they are entirely different things. However, all interpretation includes information.

3. Interpretation is an art, which combines many arts, whether the materials presented are scientific, historical, or architectural. Any part is in some degree teachable.
4. The chief aim of interpretation is not instruction, but provocation.
5. Interpretation should aim to present a whole rather than a part and must address itself to the whole man rather than any phase.
6. Interpretation addressed to children (say, up to the age of twelve) should not be a dilution of the presentations to adults but should follow a fundamentally different approach. To be at its best it will require a separate program.

Tilden acknowledged that there are many reasons why people visit places such as parks, museums, and historic houses. In his first principle, he argues it is important to determine the visitor's chief interest while visiting these places. He also contends that the visitor's chief interest is in whatever touches their personality, experiences and ideals. In the second principle, Tilden outlines the importance of keeping in mind that information and interpretation are essentially two different entities. In the third principle, Tilden argues that knowledge must be treated imaginatively. He also highlights the importance of the interpreter telling a story. A good interpreter will create a whole, peel away all confusing minor details, and drive straight towards the perfection of the story, while guiding the audience right along with them.

The philosophy behind the fourth principle is that interpretation must stimulate the audience towards a desire to widen its horizon of interests and knowledge. Interpretation must also stimulate a person's understanding of the greater truths that lie behind any statement of facts. Tilden argues the underlying premise behind the fifth principle is that a cardinal purpose of interpretation is to present a whole rather than a part, no matter how interesting a specific part may be. It is important that visitors to a national park or museum are provided with a bigger picture, one that makes sense to them, rather than be given a bunch of fragmented parts that further confuses them. Finally, the philosophy behind principle six is that interpretation programmes geared

towards children must cater to their needs rather than being just a simplified version of an existing adult programme.

Tilden's goal for the six principles was to make them applicable to a variety of settings including state and municipal parks, battlefields, museums and historic sites. They can also be applied to tourism settings. A few authors have acknowledged the applicability of Tilden's work within the context of tourism. In Kuo's (2002) study on the effectiveness of environmental interpretation at resource-sensitive tourism destinations, the author highlights Tilden's six principles as ways of helping to design an interpretation programme. Newsome, Moore, and Dowling (2002) pay tribute to Tilden, claiming that although many definitions of interpretation have emerged over the years, they always embrace Tilden's fundamental principles. Kohl (2005), Lück (2003a) and Weiler and Ham (2001) acknowledge Tilden's impact on the area of interpretation within the tourism context by presenting his definitions in their studies.

### **2.3 Education and Interpretation within the tourism context**

Education and interpretation are useful tools within tourism settings. They can be used to improve the sustainability of tourism and to help enhance visitor experiences (Moscardo, 2008; Zeppel & Muloin, 2008b). Interpretation programmes have the potential to make significant contributions to the development of a more sustainable tourism industry through encouraging conservation attitudes and therefore support for minimal-impact behaviour (Moscardo, 2008). The ultimate premise behind interpretation programmes is to provide opportunities for high-quality tourist experiences while minimising, or avoiding if possible, associated negative impacts on natural resources and visitor experiences (Marion & Reid, 2007).

Many authors have examined the relevance of interpretation within tourism and recreation settings. Orams (1993), Aiello (1998), Moscardo (1998b), Ham and Weiler (2002), Kuo (2002), and Townsend (2008) argue in favour of the potential benefits of interpretation, particularly regarding its use as a strategy to educate tourists. Educating tourists, through a well-structured and informative interpretation programme, may result in them adopting more appropriate behaviours, on-site and elsewhere, improves their overall understanding, enhances their experiences and may assist in the protection and conservation of places or cultures (Moscardo & Pearce, 1986; Walker & Moscardo, 2006; Weiler & Ham, 2001).

Although interpretation is about communication and education, it is also about improving visitor enjoyment, understanding and appreciation (Townsend, 2008); it is a special kind of communication that is particularly relevant to tourism and recreation. Moscardo and Woods (1998, p. 307) describe interpretation as “the process of communication or explaining to people the significance of the place they have come to see, so that they enjoy their visit more, understand their heritage and environment better, and develop a more caring attitude towards conservation.” Expanding further on their definition, Moscardo and Woods (1998, p. 308) contend that interpretation can educate visitors about the nature of the destination and inform them of the consequences of their behaviour, thus encouraging them to act in more appropriate ways; develop visitor support for environmental conservation and management activities; relieve pressure on sites by encouraging visitors to go to less crowded or sensitive places and by providing them with alternative experiences; and enhance the quality of visitor experiences, adding value to tourism products.

These features of interpretation can be applied within the context of shark diving. Both sharks and the individuals who dive with them stand to benefit when visitors are educated about issues relating to shark diving and about the consequences of their behaviour, when the quality of their experiences is enhanced, and when support is developed for environmental conservation. Learning is another concept inherent within the education and interpretation context that is important to shark diving. The relevance of learning and its importance to tourists' overall experiences will be discussed in the subsequent section.

## **2.4 Learning within the tourism context**

Learning is the process through which individuals become the human beings they are, the process by which they internalise the external world and through which they construct experiences of the world (McFarland, 1969). According to the Merriam-Webster Online Dictionary (2010), the word 'learn' is defined as: "to gain knowledge or understanding of or skill in by study, instruction, or experience." As demonstrated by this definition, the concept of 'experience' is central to the theme of learning. Learning is not a straightforward and easy construct to grasp; it is rather varied and complex (McFarland, 1969). Human learning, especially in the area of educational psychology, has been investigated extensively by learning psychologists (Gagné, 1985; Wittrock, 2010).

In the context of tourism, and particularly wildlife tourism, on-site learning is an area of research which is relatively recent, having only received attention in the past two decades (e.g. Beaumont, 2001; Forestell, 1993; Muloin, 1998; Ryan & Dewar, 1995; Simonds, 1991; Zeppel & Muloin, 2008c). Roggenbuck, Loomis, and Dagostino (1990) explored the learning benefits of leisure. They argue that learning is a very important

motivating factor in many leisure activities. Roggenbuck et al. (1990, p. 112) claim that the purported learning benefits of leisure include: 1. learning specific recreational activities and skills in specific environments; 2. learning about the natural and cultural environment; 3. developing more positive attitudes about the environment and resource management and becoming more effective environmental decision makers; 4. learning different behaviours towards the environment; 5. developing pride in the community and nation and becoming a more involved citizen; and 6. learning about the self. Moreover, they contend that informal leisure engagements provide individuals with opportunities to learn and develop environmental sensitivity and indirectly foster environmental activism.

John Falk and colleagues have examined the concept of free-choice learning within various leisure contexts (see Falk, 2005, 2002, 1999; Dierking & Falk, 2003; Falk & Adelman, 2003; Falk & Dierking, 2002; Falk, Heimlich & Foutz, 2009; Falk, Storksdieck & Dierking, 2007; Falk, Dierking and Adams, 2006). Free-choice learning is where the learner exercises a large degree of choice and control over the what, when and why of learning (Falk, 2005). People of all ages participate in free-choice learning through various media such as television, books, radio, museum exhibitions, the Internet and through conversations with friends (Falk & Dierking, 2002). According to Dierking and Falk (2003), free-choice learning, that youth and families engage in, outside of a school setting, in their leisure time, can play an important role in the healthy development of youth, families and communities.

Within the context of tourism research, Orams (1994a; 1996b) examined the use interpretation as a tool in managing interaction between tourists and wildlife. He outlines relevant theories of learning and offers guidelines for the creation of effective

interpretation programmes in the context of tourist and wildlife interaction. Orams was one of the early researchers to recognise the importance of learning within wildlife tourism settings. He argues that for the sake of making interpretation programmes effective, lessons from educational psychology, especially those detailing the process of learning, need careful consideration (Orams, 1996b).

In an article examining Fiji's potential to transform into a top ecotourism destination, Ayala (1995) notes the importance of learning to tourists. Although not directly related to learning in tourism environments, the article does argue that many tourists choose vacations which emphasise learning. Broad and Weiler (1998) examined learning within the context of viewing captive wildlife and they acknowledge the important role learning plays within tourism settings. They argue that wildlife exhibits should provide opportunities for enjoyable learning experiences, cognitive learning, the development of positive attitudes toward wildlife and a commitment to long-term conservation behaviour. Broad and Weiler (1998) contend that operators must be aware that the visitor experience is an integral part of any on-site learning opportunities provided.

Kimmel (1999) contends that tourism, especially ecotourism, offers substantial opportunities for environmental learning. Although ecotourism is a difficult concept to define, within the numerous existing definitions the most occurring variables include where it occurs (e.g. natural areas), conservation, culture, benefits to locals and education (Fennell, 2001). Tourism companies can benefit by emphasising the substantive learning content of their activities because that in turn means their clients can have more satisfying learning experiences (Kimmel, 1999). Schänzel and McIntosh (2000) argue that learning is one of the main benefits gained on a wildlife-viewing trip. In their examination of wildlife viewing at Penguin Place, Otago Peninsula, New

Zealand, they found that visitors felt that one of the operator's strengths was the provision of a quality learning experience (Schänzel & McIntosh, 2000). Lück's (2003a) study on 'swim with dolphin' tours in New Zealand demonstrates the importance tourists place on learning. He found that visitors highly valued learning new things, especially about wildlife, when on their tours. Stein, Denny, and Pennisi (2003), in a study on visitors to freshwater springs in north-central Florida, found that overall, learning was an important factor to tourists.

Other recent studies also demonstrate the importance of learning within tourism settings. For example, Tisdell and Wilson (2005), in a study involving turtle-based ecotourism at Mon Repos Conservation Park, Queensland, Australia, explored the role of ecotourism in promoting environmental learning and in sustaining the conservation of nature. They highlight the importance of learning during interactions of tourists with wildlife and argue that environmental learning fosters positive conservation values and pro-conservation actions by visitors. Andersen and Miller (2006) illustrate that tourists value learning greatly when on a whale-watching trip. Visitors to their study site, in the San Juan Islands, Washington, expressed having high expectations and looked forward to learning about whales and the environment. Packer (2006) examined learning and the unique contribution of educational leisure experiences. The author presents the term 'learning for fun' to refer to the phenomenon in which visitors engage in a learning experience simply because they value and enjoy the process of learning itself. Visitors to educational leisure settings either seek or are drawn into the experience of learning, even if that is not consciously part of the purpose for their visit (Packer, 2006).

Zeppel and Muloin's (2008b) study is another recent example where the conservation benefits of interpretation in wildlife-tourism settings has been investigated. They

reviewed educational benefits of guided marine wildlife experiences with dolphins, whales and turtles using Orams' (1999) framework of outcome indicators to manage marine tourism. A crucial finding in their analysis, and similar to Tisdell and Wilson's (2005) argument, is that learning during mediated encounters with marine wildlife contributes to pro-environmental attitudes and on-site behaviour changes, along with some longer-term intentions for supporting and engaging in marine conservation actions.

These examples illustrate the importance and relevance of the concept of learning within leisure settings, particularly wildlife tourism. Not only has the number of studies conducted in this area been growing, but so too has the argument in favour of enhancing education and interpretation, and ultimately the tourist's learning experience. These studies have shown that learning is an important motivating factor for wildlife tourists and tour operators need to keep this in mind when designing and delivering their overall product.

## **2.5 The Theory of Mindfulness**

The construct of mindfulness has been explored from both clinical/medical as well as social psychological perspectives. Mindfulness has its roots in Buddhist and other contemplative traditions where awareness and conscious attention are actively cultivated (Baer, 2003; Bishop et al., 2004; Brown & Ryan, 2003; Kabat-Zinn, 2003); an awareness that emerges through paying attention on purpose, in the present moment (Kabat-Zinn, 2003). A large number of clinicians have focused on the concept of mindfulness (Bishop et al., 2004). In the area of clinical mindfulness, much of the interest has been sparked by the introduction of mindfulness-based stress reduction (MBSR), a treatment programme originally developed for the management of chronic

pain (Bishop et al., 2004; Kabat-Zinn, 1982; Kabat-Zinn, Lipworth, & Burney, 1985). Clinical researchers have used mindfulness as a way of exploring a variety of phenomena such as depression (Ma & Teasdale, 2004; Teasdale, Segal, & Williams, 1995; Teasdale, Segal, Williams, Ridgeway, Soulsby, & Lau, 2000), stress and anxiety (Grossman, Niemann, Schmidt, & Walach, 2004; Miller, Fletcher, & Kabat-Zinn, 1995; Shapiro, Schwartz, & Bonner, 1998; Speca, Carlson, Goodey, & Angen, 2000), skin conditions (Kabat-Zinn et al., 1998) and brain and immune function (Davidson et al., 2003). Although a great deal of work has been conducted in these areas, it is beyond the scope of this study to delve any deeper into clinical/medical mindfulness. The main focus of this thesis is placed on the social psychological side of mindfulness (primarily the work done by Ellen Langer) and its transition into the realm of tourism research, which is discussed in greater detail in the subsequent section.

Research in the area of mindfulness, particularly regarding the differences stemming from mindful versus mindless behaviour, began in 1974 (Langer & Moldoveanu, 2000). Early work in the area focused on examining basic characteristics of mindfulness with particular attention in the areas of health, business and education. Studies of health ramifications were among the earliest studies conducted in the area of mindfulness. In the business world, there were those eager to utilise techniques that increase mindfulness in workers and managers. Mindfulness is also relevant to the area of education and learning (Salomon & Globerson, 1987). According to Langer and Moldoveanu (2000), education is an area full of *mindlessness*. Whether intending to learn an academic subject or how to play a musical instrument or a new sport, individuals often call upon mindsets that hamper rather than help one to learn. Learning should be made more meaningful for students and mindful teaching practices can have a pronounced effect on student learning (Langer & Moldoveanu, 2000). Other areas that

have been investigated through a mindfulness lens include meditation, spirituality, and emotion (e.g. Carmody, Reed, Kristeller, & Merriam, 2008; Davidson et al., 2003; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007; Grossman et al., 2004; Kabat-Zinn et al., 1985; Leigh, Bowen, & Marlatt, 2005).

The majority of research conducted on the theory of mindfulness, within the social psychological realm, has been done by Ellen Langer and her colleagues. This thesis focuses almost exclusively on that body of research and in so doing provides a necessary foundation for examining work done in the area of mindfulness and tourism research, particularly wildlife tourism. The fact that mindfulness has found its way into the context of wildlife tourism makes it particularly relevant to this research. Moreover, the applicability and usefulness of the theory of mindfulness within the wildlife tourism context (Woods & Moscardo, 2003) makes it a worthwhile concept to explore.

After various experiments, Langer came to realise the powerful effects of the human state of mindfulness and the equally powerful but destructive state of mindlessness (Langer, 1991). The underlying premise behind these counteracting states of being is that they are so common that few people appreciate their importance or make use of their power to change their lives. The benefits of mindfulness are greater control over one's life, wider choice, and making the seemingly impossible possible (Langer, 1991). Before delving further into the state of mindfulness, it is important first to describe its counterpart: mindlessness.

### **2.5.1 State of mindlessness**

According to Langer (1992, p. 289), "mindlessness is a state of mind characterised by an overreliance on categories and distinctions drawn in the past and in which the

individual is context dependent and, as such, is oblivious to novel (or simply alternative) aspects of the situation.” Mindlessness comes about in the following two ways: repetition and single exposure; the first being the more familiar way (Langer, 2000). Langer (1991) suggests the nature of mindlessness can best be understood by its three definitions:

1. *Entrapment by category* — humans experience the world by creating categories and making distinctions between them. Mindlessness sets in when one relies too heavily on categories and distinctions
2. *Automatic behaviour* — people constantly engaging in behaviours without consciously paying attention to them, much like habits being repeated over time, which ultimately implies a state of mindlessness
3. *Acting from a single perspective* — humans have a tendency to act as if there were only one set of rules, as if following a recipe with exact precision and not swaying from the instructions at any cost.

When individuals are in a state of mindlessness they are like automatons which have been programmed to act according to the sense their behaviour made in the past, rather than the present (Langer, 2000).

People also become mindless by forming mindsets (Langer, 1991). This occurs when one first encounters something and then clings to it when meeting that same thing again. These mindsets form before one does much reflection and are known as ‘premature cognitive commitments’. The mindless individual is committed to one predetermined use of information and ignores other possible uses or applications (Langer, 1991). From an early age, school children, at least in the Western world, are taught to focus on achieving specific goals rather than on how they come to achieve those goals (Langer, 1991). An outcome orientation can induce mindlessness. A mindless individual would ask the question ‘Can I do it?’, whereas a mindful individual would ask ‘How do I do it?’ (Langer, 1991).

Context is another important construct of mindlessness and can also be a premature cognitive commitment (Langer, 1991). Context depends on who individuals are in the present, who they were in the past and from which view they see things. For example, one does not think of yelling in a library, or may think of roller coasters as fun but bumpy plane rides as scary, or may view dolphins as safe but sharks as dangerous because of the context (Langer, 1991). From the mindfulness perspective, people should always treat tasks differently in different contexts (Sternberg, 2000). A state of mindlessness, however, is when individuals are context-dependent; they are oblivious to novel, or simply alternative, aspects of a situation (Langer, 1992). Individuals become over-reliant on categories and distinctions drawn in the past. The underlying argument is that the state of mindlessness can be very costly and includes serious negative outcomes such as inhibiting self-image, unintended cruelty, loss of control and stunted potential. (Langer, 1991).

### **2.5.2 State of mindfulness**

Mindfulness is essentially what mindlessness is not. Although difficult to define, mindfulness can best be understood as the process of drawing novel distinctions; it does not matter whether what is noticed is important or even trivial, as long as it is new to the observer (Langer & Moldoveanu, 2000). Mindfulness is a state of mind that is open, creative and probabilistic, in which an individual might be led to finding differences among things thought similar and similarities among things thought different (Langer, 1993).

The concept of mindfulness is most commonly referred to as a state of being attentive to and aware of what is taking place in the present (Brown & Ryan, 2003). Mindfulness

can be described as a state of being entailing the following three key qualities (Langer, 1991):

1. *Creation of new categories* — mindfulness means constantly creating new categories, unlike mindlessness which is reliant on old categories. When one makes new categories, they pay attention to the situation and the context. Also, the creation of new categories can significantly reduce the margin of conflict for it broadens one's perspective and mindful new distinctions and differentiated categories can be effective at smoothing the way individuals get along.
2. *Openness to new information* — a mindful state also implies being welcoming to new information. Lack of new information can be psychologically harmful to individuals. Being open to new information not only strengthens the individual, it also strengthens relationships.
3. *Awareness of more than one perspective* — another important feature of mindfulness is being open to different points of view. Becoming mindfully aware of others' views helps one to realise that millions of differing views exist. This awareness is potentially liberating and can also help relationships run more smoothly.

Being in the present and involved in what one is doing is a good way to keep one's mind active. The act of being in the present is an essential concept to the construct of mindfulness. Mindful learning, i.e. actively drawing distinctions and noticing new things, is a way to ensure that individuals' minds are active, that they are involved, and that they are situated in the present (Langer, 2000). Being in the present makes people more aware of the context and perspectives of their actions than if they rely upon distinctions and categories drawn in the past (Langer & Moldoveanu, 2000). When one actively draws novel distinctions, the whole individual is involved (Langer & Moldoveanu, 2000).

Control is another important component of mindfulness (Langer, 1991). Mindfulness makes possible an increased sense of control which can also help to change contexts. Much of what an individual experiences, including pain, appears to be context-dependent. Individuals can therefore control even the most apparently fixed and certain situations, if the situations are viewed mindfully (Langer, 1991).

Finally, concentrating more on process rather than outcome is an essential feature of mindfulness. Being preoccupied with ‘outcome’ can lead to mindlessness (Langer, 1991). Having a true process orientation means being aware that every outcome is preceded by a process. Success is not something that comes overnight. An individual must be open to and investigate how someone got somewhere. By doing so, individuals are more likely to realise that achievement is hard-won with a series of steps, much like completing a PhD, and not something that happens instantly; understanding this process makes their own chances of success seem more plausible. A process orientation serves two purposes: it makes individuals feel good about themselves, and it sharpens their judgement (Langer, 1991).

Although mindfulness cannot be captured and analysed definitively, it is a very useful theory for it leads to feelings of control, greater freedom of action and less burn-out (Langer, 1991). A mindful state of being allows individuals to create new categories and helps them to realise that there is not a single optimal perspective, but many possible perspectives on the same situation (Langer, 1993). There are many aspects within the theory of mindfulness that make it applicable to the tourism research context. The following section will thus focus on discussing important research conducted in the area of mindfulness and tourism, and particularly relevant to this thesis, wildlife tourism.

## **2.6 Mindfulness and tourism**

Little research has been conducted in the area of applying mindfulness to tourism settings. Only a handful of researchers have utilised the theory in their work (e.g. Frauman & Norman, 2004; Moscardo, 1999; Moscardo & Pearce, 1986; Woods & Moscardo, 2003). Moscardo and Pearce (1986), who first explored the link between mindfulness and tourism, argue this theory is particularly relevant to visitor centres and

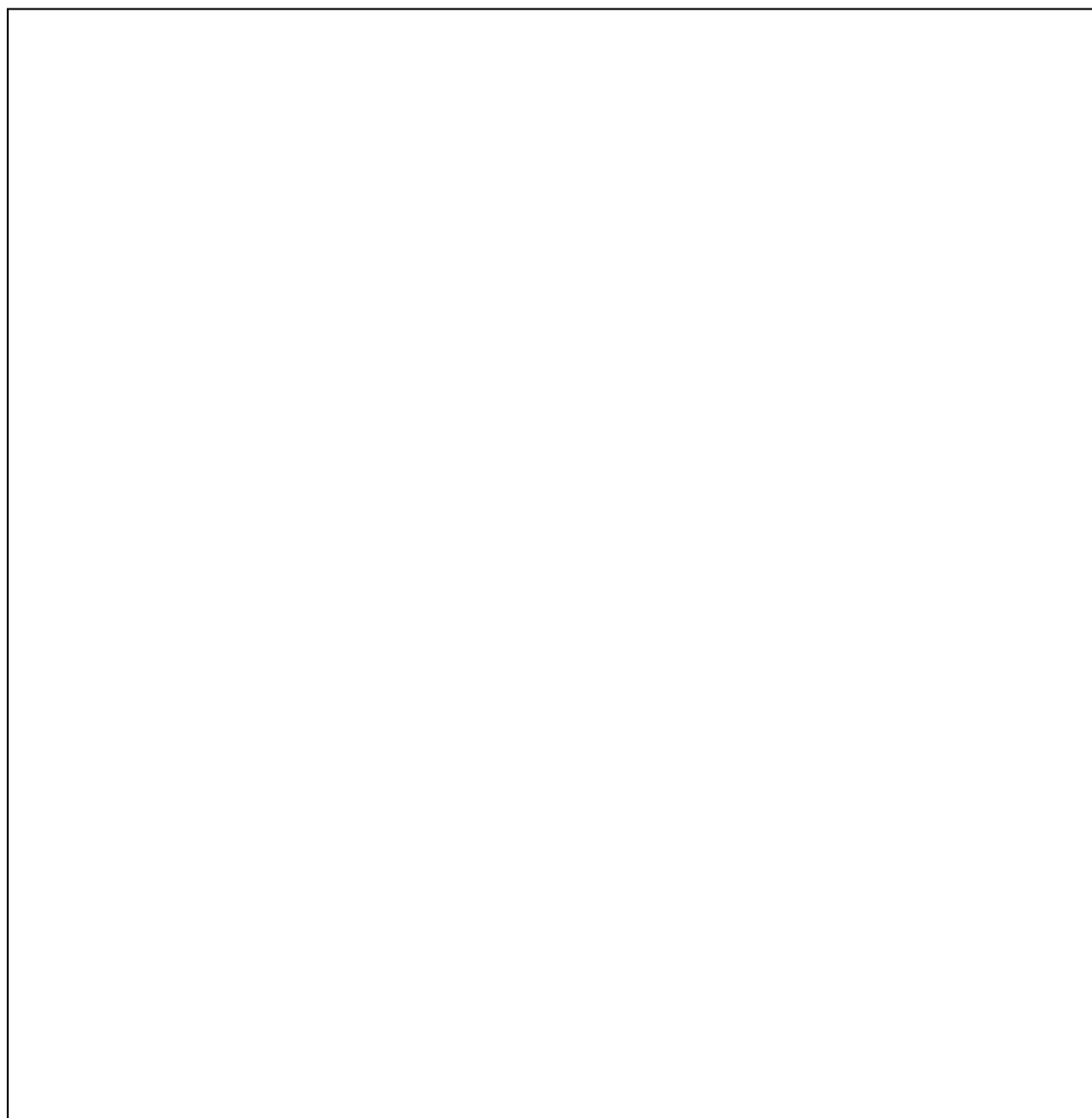
interpretation. One of the main aims of their research was to examine the relationships between key variables related to environmental interpretation, visitor enjoyment, information recall, visitor mindfulness and visitors' own beliefs in how much they had learned. Moscardo and Pearce (1986) found that a positive correlation existed between tourist experience and mindfulness, which meant visitors were being mentally stimulated by their experience in a more general way.

Mindfulness is an integrating concept that can be used to enhance the quality of the visitor experience and create a sustainable link between tourism and built heritage (Moscardo, 1996). Effective interpretation and the creation of mindful visitors at built heritage sites can have beneficial outcomes for tourism at a more general level. Incorporating mindfulness within the tourism context can make a substantial contribution to the sustainability of the tourism industry. Woods (1998) feels strongly about the potential of mindfulness within the tourism context. Although not delving into the theory to any great depths, she argues that mindfulness is useful to interpretation in zoo environments. Woods (1998) contends that mindfulness, as applied to interpretation, provides a useful theoretical base from which research results may be generalised across various settings.

An appropriate goal of any interpretation programme is to encourage visitors to be mindful (Moscardo, 2000). Mindful tourists can play active roles in interpretation, process new information, contemplate other perspectives and ultimately change their behaviours. Mindful visitors have the power to create their own personal experiences and take what makes sense to them from interpretive information provided by tourist operators. This gives visitors greater control or power over the interpretation experienced.

Woods and Moscardo (2003) argue that mindfulness enhances the potential for learning in wildlife-tourism settings and to demonstrate this they developed their Mindfulness Model for Wildlife Tourism (see Figure 2.1).

Figure 2.1: Mindfulness model for wildlife tourism



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This model explores mindfulness within a wildlife tourism setting thus making it particularly relevant to this study. The premise behind the model is that operators will increase visitor enjoyment, satisfaction and learning by creating a mindful tourism environment; they can do this through features of the experience, the interpretation, the

tourists and the animal. Although not all features in the model will be possible in every wildlife-tourism situation, improving the overall mindfulness of wildlife tourists will enhance their ability to learn.

Tubb (2003) also acknowledges the importance of visitor mindfulness. In a review of work done in the area of mindfulness and tourism, she argues that it is simply not enough for a tourism operator to present information; instead, visitors need to be stimulated to search for new information and encouraged to process information actively, like the theory of mindfulness prescribes. Tubb (2003) agrees that mindful visitors have a greater appreciation and understanding of a site and consequently will provide more support for its conservation.

Frauman and Norman (2004) discuss the construct of mindfulness and its application in managing visitors to natural, cultural and historically-based tourism destinations. They argue that a mindful visitor could prove to be a vital ingredient for sustainable destinations and the success of their surrounding communities. Frauman and Norman (2004) argue that it makes sound management sense to provide services to and activities for the tourist that are ‘mindfully oriented’ in their delivery.

## **2.7 Orams’ Interpretation Model**

Orams (1996b) felt that it was important to establish how interpretation can best be made effective in nature-based wildlife tourism settings. Inspired by the work of Forestell and Kaufman (1990), he proposed a model outlining a variety of techniques (i.e. features of an effective interpretation programme) to assist in this aim. This model has been and will be referred to as Orams’ Interpretation Model throughout the thesis. The main reason for choosing to examine Orams’ model and make it a central

framework of this thesis is primarily because of its relevance to this study. The model is useful for exploring the concept of education and interpretation and was designed and analysed within a similar setting as the current study, i.e. wildlife tourism. Moreover, the intention of using Orams' model, since it was conceived within the context of whale watching, was to analyse how applicable it is within the specific context of shark diving and how potentially useful it is for dive operators in this study.

Prior to describing Orams' model in greater detail, it is important to mention the work of Forestell and Kaufman (1990). They developed techniques for interpretation in nature tourism settings and more specifically in wildlife-viewing settings. Orams (1996b) outlined these techniques in the form of a diagram (see Figure 2.2).

Figure 2.2: Forestell and Kaufman's Interpretation Model

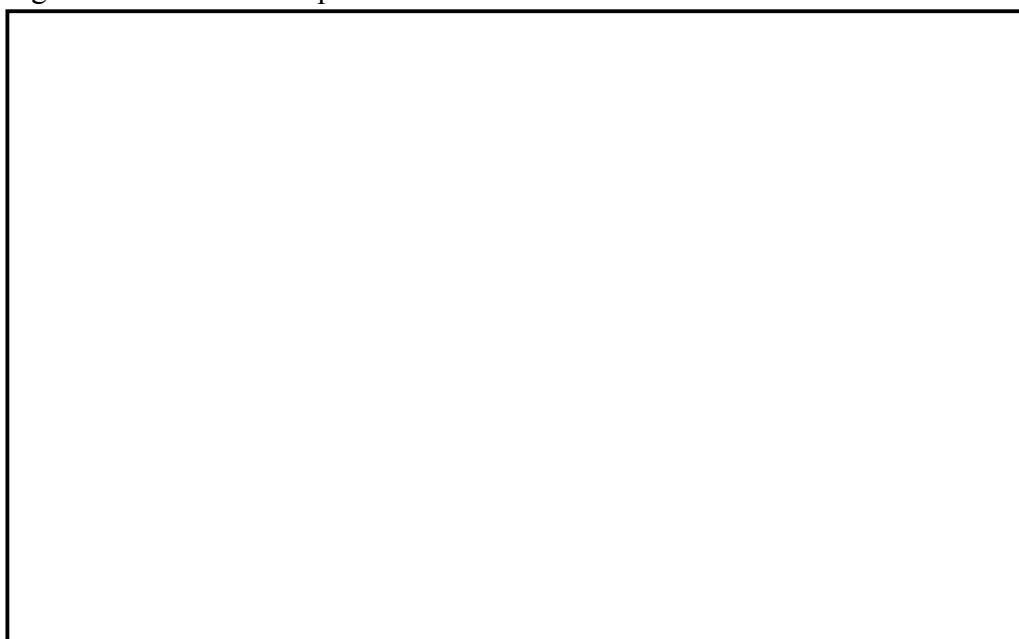


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In the first stage of the model, the premise is that a 'dynamic disequilibrium' should be created or promoted (Orams, 1996b). This stage involves creating a perceived need for information and thereby a motivation to learn. The intention is to create questions rather than to provide answers.

Once the tourist comes into contact with nature, the ‘cognitive dissonance’ created during the pre-contact stage needs to be managed (Orams, 1996b). In this phase, information should be provided in an informed and interesting manner and must be relevant to the tourist’s observation and experience. In the final stage, the cognitive dissonance should be facilitated (Orams, 1996b). Follow-up activities can be used to help participants incorporate the new information (much like the theory of mindfulness) into changed behaviour. Drawing on work done in the area of psychology of learning (e.g. Festinger, 1957; Piaget, 1972) and arguing that not all nature-based tourism situations lend themselves to Forestell and Kaufman’s model, Orams (1996b) decided to adapt it and create his own version (see Figure 2.3).

Figure 2.3: Orams’ Interpretation Model



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Interpretation at tourism destinations must play an active role in visitor management strategies in order to encourage tourists to alter inappropriate on-site behaviours and to assist the management of tourism development (Kuo, 2002; Moscardo, 1998b; Orams, 1996b; Zeppel & Muloin, 2008a). An effectively designed interpretation programme

can also have a significant impact on tourists' learning and attitudes towards conservation (Lück, 2008a; Orams, 1996b; Stamation et al., 2007). The first phase in Orams' Interpretation Model is the actual development of an interpretation programme. Orams (1996b) argues that to design an effective programme it is crucial to understand the process of learning so that the interpretation successfully targets the mental processes involved in human learning.

In the next phase of Orams' model, cognitive dissonance, or 'imbalance', must be created, which leaves the participant needing to find a balance or resolution. The premise behind developing an effective interpretation programme is that initially it should attempt to throw participants cognitively 'off balance' by deliberately attempting to create questions in their minds (Forestell, 1990, 1993; Orams, 1996b). The programme can act as a tool that lays out specific questions and leaves participants to ponder the answer. For example, when observing dolphins, interpretation material might ask a question about the biology of mammals such as: It is known that one of the characteristics of mammals is that they all have hair, right?; which can then be followed up by asking participants to take a closer look at dolphins and asking if they too have hair. This type of technique immediately involves people, they are no longer just observers but active participants looking more closely at the animal and trying to resolve the dissonance created (Forestell, 1993; Orams, 1996b). This also creates a state of mindfulness whereby tourists expand their horizons to alternative possibilities and become active rather than passive, or mindless, participants.

The affective domain is important to human responses to environmental settings and so must be taken into consideration along with the cognitive aspect of learning (Beaumont, 2001; Eiss & Harbeck, 1969; Howard, 2000; Orams, 1996b). Eiss and Harbeck (1969)

describe the affective domain as that part of human thinking that includes attitudes, feelings, emotions and value systems. The affective domain is particularly relevant in nature-based tourism because of the emotional responses that interaction with wildlife can provoke (Ballantyne & Packer, 2005; Ballantyne, Packer, Hughes, & Dierking, 2007; Myers, Saunders, & Birjulin, 2004; Orams, 1994a, 1996b). Issues that involve humans' affective domain are likely to be those central to all life (Orams, 1996b). Topics in the wildlife setting such as reproduction, birth, death, competition and conflict, and social relationships are all emotional areas to which humans can relate. An interest and emotional response to these issues is likely and should be facilitated by operators (Orams, 1996b).

Creating cognitive dissonance and appealing to the affective domain can be effective techniques at increasing knowledge and influencing intentions, but this does not necessarily lead to behaviour change (Fishbein & Ajzen, 1975; Orams, 1994a, 1996b; Schänzel & McIntosh, 2000). An interpretation programme should do more than merely increase knowledge; it should prompt behaviour change as well (Ballantyne et al., 2007; Gralton, Sinclair, & Purnell, 2004; Orams, 1994a, 1996b; Schänzel, 1998; Tubb, 2003), which leads to the next phase of Orams' model. In the third phase tourists must be convinced why they should change their behaviour and they must be given motivations or incentives to act. An important mechanism for motivating behaviour to change is by providing examples of human activities that are harmful to the natural environment (Orams, 1996b; Tubb, 2003). Making visitors aware that they can make a difference and encouraging or provoking them to take action (much like making tourists 'mindful' about the situation) should form a critical component of an interpretation programme (Curtin, 2003; Marion & Reid, 2007; Orams, 1995, 1996b; Tilden, 2007).

Moreover, Tilden's (2007) first principle claims that interpretation must somehow relate what is being displayed or described to something within the personality or experience of the visitor. Tourists making a personal connection to the topic of an interpretation programme is also a core factor of Woods and Moscardo's (2003) Mindfulness Model of Wildlife Tourism. Another core factor of their model, however, is that the visitor experience is new and that the animals encountered are rare and unique. With this in mind, the challenge to the operator is to strike a balance between providing their visitors with a personal (i.e. through better knowing their clientele), and at the same time, novel experience, which potentially leads to behaviour changes on-site and back home.

The fourth phase of Orams' model requires providing tourists with the opportunity to take actions. To ensure behaviour change, it is not enough simply to motivate tourists, they must also be given immediate opportunities to act (Ballantyne et al., 2007; Curtin, 2003; Orams, 1996b). For example, opportunities may include beach clean-up exercises, data gathering for research projects, petitions to sign, memberships to environmental organisations, making environmentally friendly products available for purchase, and creating or providing lists outlining how visitors can continue acting environmentally friendly once at home (Orams, 1996b).

Evaluating effectiveness, especially on visitors' behavioural changes, is a critical component of all interpretation efforts (Munro, Morrison-Saunders, & Hughes, 2008; Orams, 1996b; Stamation et al., 2007; Sureda, Oliver, & Castells, 2004). However, little research has been conducted on evaluating the effectiveness of interpretation efforts, especially in wildlife-tourism settings (Higginbottom et al., 2003; Madin & Fenton, 2004; Marion & Reid, 2007; Munro et al., 2008; Zeppel & Muloin, 2008a). The last two phases of Orams' model include evaluating an interpretation programme's effectiveness

by obtaining tourists' feedback. This feedback is then used for the continuous planning of the programme. Useful tools in evaluating a programme's effectiveness include observations, interviews and questionnaires, or a combination of these (Orams, 1996b). Orams' (1996b) underlying argument, as well as that of other authors (e.g. Aldridge, 1989; Bramwell & Lane, 1993; Lück, 2003a; Moscardo, 1998b; O'Riordan, Shadrake, & Wood, 1989), is that an effective interpretation programme can be an effective mechanism for the management of tourism settings.

## **2.8 Summary**

This chapter has discussed some of the important themes within the area of education and interpretation, from the earlier days of Freeman Tilden's work on the subject of interpretation in heritage and recreation settings to the more recent authors who, whether knowingly or not, have taken his concepts and incorporated them within the realm of tourism. Educating visitors and using interpretation has become a central theme to a variety of tourism settings (Moscardo, 2008). Education and interpretation has become a critical component within wildlife and marine wildlife tourism and is central to the current research. Many studies have shown that tourists to these types of settings want to be educated. Operators of these types of environments need to facilitate visitor learning because it may, in turn, enhance the tourists' overall experiences and induce pro-conservation behaviour change, both on-site and once they return to their home environments. A way for tourist operators to facilitate visitor learning is by creating an educational programme or, at the very least, by increasing their interpretation efforts.

Some authors have devised models or incorporated previous theories as ways of helping operators better understand the benefits of a well-planned and delivered educational

programme. Constructs such as Orams' Interpretation Model and the Theory of Mindfulness, especially the way in which Woods and Moscardo (2003) incorporated it in their Mindfulness Model for Wildlife Tourism, can be potentially useful tools for tourist operators because they act as theoretical and visual guides for structuring an interpretation programme. One of the main goals of thesis, therefore, is to examine whether these individual frameworks are potentially useful together within the context of shark tourism, since they were designed and analysed within the context of wildlife tourism.

### 3.1 Introduction

Human fascination with wildlife and the strong desire to have close encounters with animals has existed for as long as the two have co-existed (Newsome, Dowling, & Moore, 2005). In the past two decades, Franklin has conducted research aimed at trying to understand the relationship between humans and animals. A large body of his work in this area is based on the dramatic transformation in the way humans (particularly in the last century and within Australian and other contemporary Western societies) view and interact with animals (see Franklin, 1996, 1999, 2006, 2007, 2008; Franklin, Tranter, & White, 2001; Franklin & White, 2001).

At the beginning of the twentieth century, human-animal relationships were dominated by human needs and interests and animals were merely resources to be used on the path toward human fulfilment. As the century came to a close, these relationships were increasingly being subject to criticism and a reverse trend was occurring whereby humans were being urged to be more sensitive and compassionate to animal needs and interests (Franklin, 1999). Today animals represent, symbolically, many different things other than themselves. Moreover, humans have been using these animal representations as a way of identifying themselves, for example, to be a kitten signifies playfulness and love, to be a lamb means innocence, to be a wolf, a fox or a maggot, is to embody a range of opposing or bad characteristics (Franklin, 2006). An animal or group of animals may also represent, in arbitrary form, a particular social group or maybe even an entire nation. Animals have thus come to form a backcloth to a great deal of modern

Australian, and other Western Cultures', life, both embodied and symbolic (Franklin, 2007).

Since traditionally human interaction with wildlife often entailed the killing or removal of organisms from their natural habitat (Duffus & Dearden, 1990; Franklin, 1999), tourism based on less harmful uses of animals (for example, observing without killing or removing) is a much newer phenomenon (Reynolds & Braithwaite, 2001). Wildlife tourism, in both terrestrial and marine environments, is also a newer area within the context of academic research on tourism. Studies conducted in this area include game safaris and trophy hunting in Africa, polar bear watching in Canada, whale and dolphin watching in New Zealand, and shark diving in South Africa (e.g. Dicken & Hosking, 2009; Lemelin, 2008; Lemelin & Wiersma, 2007; Dobson, 2006; Dyck & Baydack, 2004; Lusseau & Higham, 2004; Richardson, 1998; Lück, 2003a, 2003b).

The purpose of this chapter is to discuss previous research in various areas that relate to the overarching theme of wildlife tourism, including marine tourism and marine ecotourism, marine wildlife tourism, scuba diving and scuba-dive tourism, and sharks and shark tourism.

### **3.2 Wildlife tourism**

There are essentially two broad forms of wildlife tourism: consumptive and non-consumptive. Consumptive wildlife tourism (for example, hunting and fishing) involves a higher amount of physical interaction between human and wildlife (Duffus & Dearden, 1990) and in many cases entails the removal or killing of an animal (Tremblay, 2001). Non-consumptive wildlife tourism involves a lower amount of physical interaction with wildlife and the species is not purposefully removed or

affected by the interaction (Duffus & Dearden, 1990); it usually refers to the viewing of wildlife for recreational purposes (Tremblay, 2001).

The belief that non-consumptive forms of wildlife tourism are less detrimental than consumptive forms has come under criticism. Wilkes (1977) believes that the notion of non-consumptive use of outdoor recreation resources is a false one. He argues that so-called non-consumptive users consume visual, spatial and physical resources, especially when interacting with wildlife. Tremblay (2001) argues that the dichotomy between consumptive and non-consumptive wildlife tourism can be overly simplistic and often misleading. He contends that there is little evidence that non-consumptive forms of tourism involve greater empathy, respect or learning benefits than do consumptive forms. Franklin (2008) believes that consumptive forms of wildlife tourism, especially hunting and fishing, offer a more embodied and intimate relationship with the natural world than does watching and other visual practices of wildlife leisure. He contends that individuals participating in consumptive forms of wildlife tourism form a closer bond to natural places, and how they change over time, and acquire a greater depth of knowledge about the precise state of wildlife populations.

Theoretically, shark diving is a viewing activity with no direct removal or killing of the species, although in certain cases, especially whereby operators use bait to lure the animals (which will be discussed in greater detail later in this chapter), it can be argued that this activity can have negative impacts on sharks (Clarke et al., 2011; Clua et al., 2011, 2010; Cubero-Pardo et al., 2011; Fitzpatrick et al., 2011; Clua, 2010; Smith et al., 2010; Knight, 2009).

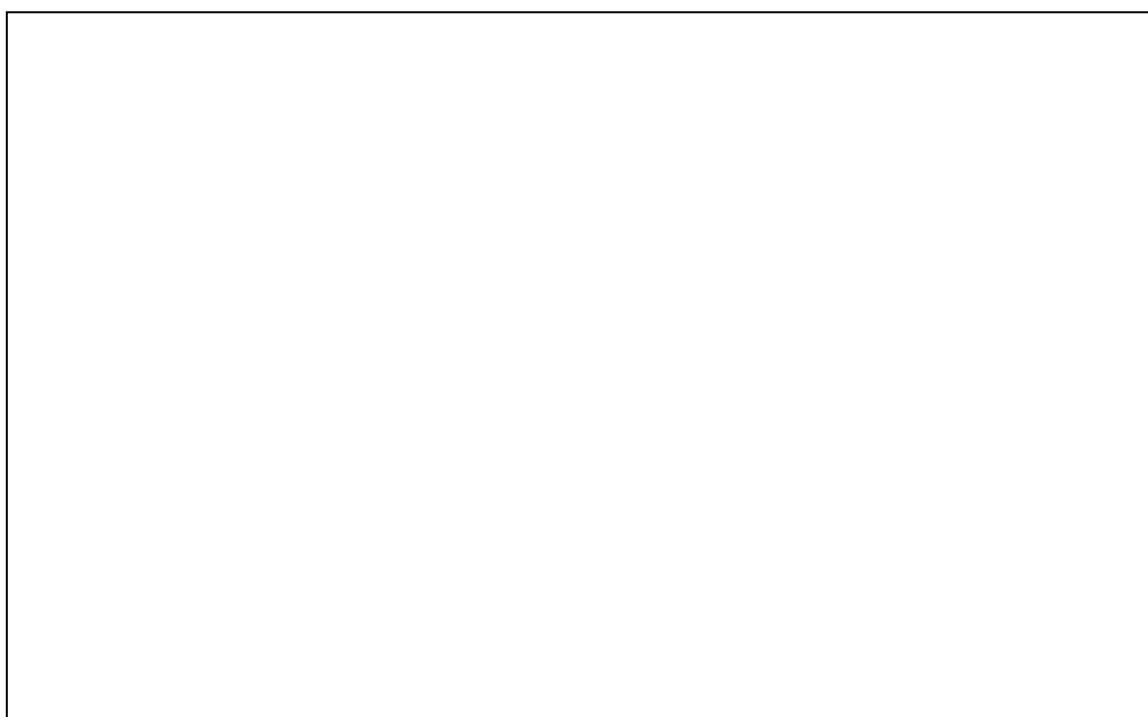
Seeking out closer interactions with wildlife in their natural habitats has become a very popular recreational activity (Rodger, Moore, & Newsome, 2007, 2009). Wildlife tourism is a growing subsector of the greater tourism industry; it attracts millions of people worldwide and generates substantial amounts of money annually (Catlin, Jones, Jones, Norman, & Wood, 2010; Curtin, 2010). As this industry grows, so do concerns regarding the threats that overexposure by visitors has on fragile habitats and species (Curtin, 2010; Rodger et al., 2009). The challenge is to ensure engaging experiences that provide close encounters with wildlife while still protecting animals and their habitats (Ballantyne, Packer, & Hughes, 2009). Some authors argue that one way of meeting this challenge, and a potential management tool, is through the use of on-site education and interpretation (Ballantyne et al., 2009; Ballantyne, Packer, & Sutherland, 2011; Moscardo, 1998b; Stewart, Hayward, Devlin, & Kirby, 1998; Weiler & Ham, 2001).

Reynolds and Braithwaite (2001) developed a wildlife-based tourism model (see Figure 3.1) which identifies wildlife tourism as a central area overlapping with other areas such as nature-based tourism, ecotourism, consumptive use of wildlife, rural tourism and human relations with animals. The model is significant because it recognises the importance of wildlife-based tourism and makes a pioneering effort to show where it fits into the grander scheme of the tourism industry.

Reynolds and Braithwaite's (2001) model, however, does not take into account an important factor: wildlife-based tourism, or at least encountering wildlife, can occur in areas (e.g. urban or marine) other than those mentioned in the model. The marine environment, for instance, has become a major venue for tourism and recreation (Higham & Lück, 2008a), whereas wildlife-tourism activities ranging from viewing

small insects and flowers to watching large mammals and birds (Curtin, 2008) can all occur in urban centres as well as in more rural or natural settings. Even so, an important aspect of Reynolds and Braithwaite's (2001) model is that it demonstrates that research attention is being paid to this rapidly growing area of tourism (Curtin, 2010). Tourism based on interactions with wildlife is attracting attention from tourists, governments and the tourism industry, as well as researchers (Curtin, 2008; Higginbottom, 2004).

Figure 3.1: Wildlife-based tourism model



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People around the world are increasingly interested in ‘interacting’ with and observing wildlife in their natural environments and this growth in wildlife tourism (Rodger et al., 2007) has attracted a great deal of attention from researchers worldwide. Some of the studies conducted in the area of wildlife tourism, within the past twenty years, have examined a wide variety of species including albatrosses (Higham, 1998), big game (Lindsey, Frank, Alexander, Mathieson, & Romañach, 2007; Novelli & Humavindu, 2005), crocodiles (Ryan, 1998), manatees (Shackley, 1991), sea turtles (Wilson &

Tisdell, 2001), sharks (Davis, Banks, Birtles, Valentine, & Cuthill, 1997; Davis & Tisdell, 1998a), and stingrays (Shackley, 1998).

### **3.3 Marine tourism**

Although marine environments have long been settings for transport and communication, exploration and subsistence, the recreational and tourism pursuit of marine experiences is a recent phenomenon (Higham & Lück, 2008a). Cater and Cater (2001) argue that the marine environment lags only behind space as a final frontier for tourist exploration. In years past, marine environments have been protected from tourists because of safety concerns and because of their physical and financial inaccessibility; however, today's marine environments are much more accessible to people, thanks in large part to advances in technology and the increase in international travel (Orams, 1999). This increase in accessibility has sparked the growth of an industry that revolves around recreational activities in marine environments, known commonly as marine tourism.

When attempting to define a term or topic such as marine tourism, difficulties inevitably arise (New Zealand Tourism Research Institute, 2009). Some of the most obvious forms of marine-tourism activities include watching wildlife, scuba diving and snorkelling, windsurfing, jet skiing, deep-sea fishing, sea kayaking, surfing and sailing (Hall, 2008; Higham & Lück, 2008a; Orams & Carr, 2008). Other activities, such as visiting an aquarium or watching a marine-related movie like *Jaws*, also appear to be related to marine tourism and so make defining the concept difficult (Orams, 1999). Orams (1999, p. 9) provided clarity to the concept of marine tourism by describing it as: "those recreational activities that involve travel away from one's place of residence and which

have as their host or focus the marine environment (where the marine environment is defined as those waters which are saline and tide-affected).”

Marine environments are vulnerable and susceptible to adverse ecological, social and economic impacts (Pforr & Dowling, 2009). Scientists have criticised the commercialisation of marine-based tourism activities because they can have negative impacts on marine species and habitats (Orams & Carr, 2008). Concerns about the impacts from marine tourism has sparked considerable debate regarding how to control it in order to minimise detrimental impacts or even whether this type of tourism is desirable (Orams, 1999). The negative impacts to marine environments fall under two main categories: the first is associated with built infrastructure, including marinas and resorts; and the second is associated with the tourists and their activities, for example, damage from snorkelers and divers resting upon or breaking coral, disturbance to wildlife from visitors, and anchor damage from boating activities (Moscardo, Pearce, Green, & O'Leary, 2001).

With the increased use of marine environments for tourism purposes comes the need for informed planning and sustainable management and for the education of important stakeholders such as tourists, planners, managers and operators (Lück, 2008b). Managers of marine and coastal environments (i.e. governments, planners and tourist operators), especially in protected areas, have three main tasks: first, they must manage biophysical features of the area, second, they should be concerned with processes necessary to sustain the ecosystem in the area and third, they must manage amenity, i.e. provide and manage options for human use of the area (Moscardo et al., 2001).

One of the greatest challenges facing stakeholders of coastal and marine environments is how to incorporate tourism development within the greater scope of coastal and marine management, and thus increase the likelihood of long-term sustainability (Hall, 2001). Overcoming this challenge is imperative for countries in which marine tourism occurs. One way of dealing with this challenge is through effective education and interpretation programmes for the tourists (Moscardo, 1998a, 1999). An effective interpretation programme can assist marine-tourism operators in two main ways: first, it can enhance the quality of visitors' experiences, thus encouraging continued interest in the activity leading to their satisfaction, and ultimately creating economic sustainability; and second, it can assist in the management of visitors and their impacts, thus contributing to the continued quality of the environment and the host community's way of life (Moscardo, 1998b). Orams (1996b) argues that a management response to increasing tourist pressure on the natural environment lies in educating tourists, which in turn can be an effective means of reducing negative impacts.

Miller (1993) was one of the first academic researchers to address the issue of a rising interest in coastal and marine tourism, but there have been many since: Muir and Chester (1993) examined issues that affect management at Michaelmas Cay and Reef in Australia, a seabird-nesting destination which attracts many visitors annually; Davis and Tisdell (1995) investigated scuba diving and its impact on marine protected areas; McKegg, Probert, Baird, and Bell (1998) provided an overview of the marine-tourism industry in New Zealand, an important part of the country's overall tourism industry; Lück (2003a) examined whale and dolphin watching and how education and interpretation can act as an agent for conservation; Finkler and Higham (2004) explored management issues related to whale watching in the San Juan Islands, US; Newsome, Lewis, and Moncrieff (2004) looked at the impacts and risks associated with developing

stingray tourism in Hamelin Bay, Western Australia; and Hoyt (2005) examined sustainable ecotourism and how it relates to whale watching in the Atlantic islands.

More recently, NZTRI conducted a study and published a report for the Ministry of Fisheries, New Zealand (New Zealand Tourism Research Institute, 2009). The report analyses the economic impacts that marine tourism has had on two traditional fishing localities in New Zealand: the Tutukaka Coast (northern North Island) and Raikura/Stewart Island (southern South Island). Similar to the NZTRI study, Brunnschweiler (2009) examined issues surrounding a traditional fishing village in Fiji and how it is being impacted by the marine-tourism activity of shark diving. The study reports on the planning, implementation and economic revenue of a marine-tourism project involving local communities.

Other recent studies include those of Catlin, Jones, Norman and Wood (2010) and Catlin, Jones, Jones et al. (2010), who examined various aspects of whale shark tourism in Ningaloo Marine Park, Western Australia, and Zeppel and Muloin (2008a) and Zeppel (2008), who investigated the conservation and education benefits of marine wildlife tours. Higham and Lück's (2008b) book also deals with marine wildlife tourism, with a focus on management issues. These more recent initiatives demonstrate the importance of and need to continue conducting research in the area of marine tourism.

In addition to these studies in the area of marine tourism, there have been other positive initiatives emerging in the last twenty years. For example, Orams' (1999) text was dedicated entirely to the field, and the Congress on Coastal and Marine Tourism has met six times since 1990 (the first being in Hawai'i and the most recent being in South

Africa in 2009). The academic journal *Tourism in Marine Environments* (TIME), focusing on the theme of marine tourism, was developed in 2004, and the *Encyclopedia of Tourism and Recreation in Marine Environments* was published four years later (Lück, 2008b). These initiatives have been addressing some of the pressing issues in the field of marine tourism, and demonstrate the increasing attention being paid to this new field of academic study. As Miller (2004, p. 59) states, “marine tourism is simply too important to go unexamined.” More research in this area is needed and more initiatives such as these already mentioned need to continue for years to come.

### **3.4 Marine ecotourism**

The growing size of the marine tourism industry has generated concerns about impacts on fragile marine habitats and thus greater attention has been given to the ecological sustainability of all forms of marine tourism (Stolk, Markwell, & Jenkins, 2005). As a result, the concept of ecotourism, associated primarily with terrestrial forms of tourism, has now become readily applied in marine and coastal areas. According to Stolk et al. (2005), the term marine ecotourism is frequently employed to describe what are considered to be the most sustainable forms of marine tourism and recreation. Marine ecotourism has also been growing rapidly, both in terms of volume and value (Brunnschweiler, 2009; Cater, 2003; Garrod & Wilson, 2004; New Zealand Tourism Research Institute, 2009). Creating solid definitions for concepts such as marine ecotourism, however, is a difficult task (New Zealand Tourism Research Institute, 2009; Orams, 1999). As Fennell (2001) argues, one of the most habitual practices in the field of ecotourism is the development of a definition. In a content analysis of ecotourism definitions, he reveals that many authors have attempted to define the concept. Due to the complex nature of trying to provide a definition for a concept such as ecotourism or marine ecotourism, it is more reasonable to discuss some of the occurring themes, of the

many definitions which have been proposed, rather than to present one here randomly for the purpose of this thesis.

Garrod (2003) attempted to define the concept of marine ecotourism (in Garrod and Wilson's (2003) text dedicated entirely to issues and experiences surrounding marine ecotourism). He found that although many components of past definitions are highly contested, there are some that are widely appreciated, with the most commonly held beliefs surrounding the concept of ecotourism being the need for suitable education and interpretation, the need for it to be managed appropriately and the aim for genuine sustainability. Cater and Cater (2007), in a more recent text dedicated to marine ecotourism, as well as Cater (2003), argue that for this form of tourism to be viable it must be viewed not in isolation but rather within a variety of contexts such as marine tourism as a whole, other tourism segment markets and other economic activities. Although there may be issues and cynicism surrounding the concept of marine ecotourism (Orams & Carr, 2008), initiatives such as the texts created by Garrod and Wilson (2003) and Cater and Cater (2007) suggest that it has become an important component within the greater tourism and marine-tourism contexts, and is worthy of dedicated study in its own right.

Marine ecotourism, as a subject area on its own, has only witnessed increasing attention by academic researchers in the past seven years. Although many studies had been conducted and texts written prior to 2003 in the areas of marine tourism and ecotourism separately, it was Garrod and Wilson's (2003) book which first combined the two. The purpose of their book was to inform readers about the concept of marine ecotourism and key issues involved in ensuring marine tourism is developed in a sustainable manner. Cater and Cater's (2007) more recent book analyses key issues surrounding marine

ecotourism and argues the importance of viewing this industry holistically in order to ensure its sustainability. The main issues addressed in their book include patterns and processes (for example, marine-ecotourism resources and attractions), primary stakeholders and interests (for example, coastal communities, marine ecotourists, the marine-ecotourism industry), and regulation, facilitation and collaboration (for example, planning agencies, networks and initiatives).

Cater (2003) identified issues and dilemmas within the marine-ecotourism context. She argues that the central dilemma is how to manage marine ecotourism in a sustainable way, incorporating the qualities of socio-cultural responsibility, customer satisfaction, economic viability and environmental integrity. Cater (2003) contends that the potential benefits of marine ecotourism are widely documented but that there exists a considerable gap between theory and practice. The failure of marine ecotourism to achieve some of its goals (for example, to increase local involvement) indicates the need to identify the nature of this gap as well as its causes. One important cause is the failure to recognise that marine ecotourism exists within the wider contexts of economic activities and not in isolation (Cater, 2003).

Townsend (2003) explored the importance of education within the realm of marine ecotourism, in particular with regards to management and planning issues. Orams (2003) examined the importance of marine ecotourism to New Zealand. Because New Zealand is an island nation, its marine environment is of great importance to it, both biologically and economically. Orams (2003) argues that although some true marine ecotourism occurs, in general New Zealand's tourism industry exploits natural attractions. As tourism in marine environments increases, it is important that proper attention is given to management and conservation issues.

Garrod and Wilson (2004) investigated marine ecotourism in peripheral areas and analysed some of its potentials and pitfalls. They state that the general agreement is that marine ecotourism is nature-based, oriented towards sustainable development, is educational/interpretive, and is community led. Halpenny (2002) outlined ways in which The International Ecotourism Society (TIES) developed a set of ecotourism guidelines for small-scale marine-based tourism businesses. The author outlined four areas of priority for supporting the efforts of these businesses: networking, education, finance policy and documentation. The concept of education again appears to be an ever-present and acknowledged factor within the marine-ecotourism context.

### **3.5 Marine wildlife tourism**

Although comprising a component within the larger context of wildlife tourism, it is important to dedicate a separate section of this review to marine wildlife tourism. Experiencing and interacting with marine wildlife, especially in its natural environment, is a major tourism attraction which has been growing for quite some time (Newsome et al., 2005; Orams, 1994b, 1999). From a business owner's perspective, marine wildlife tourism is a popular and financially rewarding niche of wildlife tourism (Mayes & Richins, 2003; Valentine & Birtles, 2004).

Miller (2008) describes marine wildlife tourism as an activity where the fauna has natural connections to oceans and coastal ecologies, that is essentially non-consumptive, and which overlaps with a variety of other forms of tourism such as ecotourism and nature-based and environmental tourism. Zeppel and Muloin (2007) describe marine wildlife tourism as any tourist activity with the primary purpose of watching, studying or enjoying marine fauna; it involves activities such as boat trips in estuarine areas, guided island or coastal walks, observing animals from land viewpoints, visiting marine

or coastal nature reserves, and participating in marine-life study tours or conservation holidays.

Orams (1994b) highlights that human interaction with marine wildlife, in particular dolphins, dates back to the times of Pliny the Elder, around 70 Anno Domini (AD), when symbiotic relationships existed between fishermen and dolphins. One of the earliest examples of marine wildlife tourism was during the time of Pliny the Younger (109 AD), when a playful relationship between a boy and a wild dolphin became a major tourist attraction in North Africa (Orams, 1994b). Hutching (2009) argues that over the centuries many cultures have revered dolphins. He presents an example of a wild dolphin named Opo, after the town of Opononi in north-western New Zealand, who from mid-1955 to early 1956 used to follow boats and act playfully around people. Human fascination surrounding Opo grew rapidly over the months and her antics would draw crowds of hundreds to the tiny seaside town (Hutching, 2009).

Another example of human fascination with dolphins was the 1960s television series *Flipper*, which was a spin off of the feature film by the same name. This show also demonstrated a strong relationship between humans and a wild dolphin; it centres on a game ranger and his two sons and their adventures with their precocious pet dolphin named Flipper (tv.com, 2011). *Flipper* stimulated a period of reverence for dolphins, but it also encouraged the capture of dolphins for human enjoyment at aquatic fun parks (Phillips, 2010). In fact, the dolphinarium industry expanded massively worldwide as *Flipper* caught the popular imagination (Hughes, 2001). There are many theme parks around the world, affording people opportunities to get close to and even interact with dolphins, such as SeaWorld in the US, which alone receives millions of guests every year (SeaWorld, 2011).

A recent example of human fascination with wild dolphins occurred in New Zealand, from 2007 to 2010. A playful yet unpredictable dolphin named Moko became a huge attraction for beach-goers along the eastern coast of the North Island (*The New Zealand Herald*, 2010). Moko's antics delighted visitors and created a lot of excitement among local residents (Helliwell, 2010). The news of a carcass, believed to be that of Moko, washing up on shore in the winter of 2010 caused a great deal of sadness because the way he had interacted with people had captured the public's heart and inspired an interest in care for dolphins and other marine mammals in general (Helliwell, 2010; NZPA & *NZ Herald* staff, 2010).

Commercial tourism activities revolving around marine wildlife, such as swimming with wild dolphins, have grown in popularity since the 1980s (Hutching, 2009). Dolphin-based tourism now takes place in many countries including Argentina, Australia, Japan, Norway, South Africa, Tonga and the United Kingdom (UK), but New Zealand has been at the forefront of this industry (Orams, 2004). Each year hundreds of commercial tourism operators apply to New Zealand's Department of Conservation for permission to watch or swim with dolphins as well as seals and whales (Hutching, 2009). Although marine wildlife tourism is dominated by whale and dolphin interactions, there are other forms of wildlife-tourist activities that are popular (for example, watching sea turtles, sharks, manatees and seabirds), and which have been attracting the attention of tourism researchers.

Shackley (1998) and Newsome et al. (2004) studied stingray tourism and highlighted some of the negative impacts associated with this form of marine wildlife tourism; they argue that there is a need for management actions in order to reduce some of these impacts. Shackley's (1991) study of manatees in Southern Florida is another example of

a detrimental form of marine wildlife tourism. The large numbers of tourists flocking to visit the manatees are causing the animals severe stress, which in turn decreases their reproductive rates. Shackley (1991) states that the popularity of the manatees has been their own demise, and advises tourists to stay away from these animals altogether. In contrast, Wilson and Tisdell (2001) examined sea turtles as non-consumptive tourism resources, and argue that this form of tourism, if managed properly (with education and interpretation as a potential tool), can contribute to the conservation of the species.

Dobson (2006) argues that non-consumptive marine wildlife tourism can act as a positive tool for assisting in the conservation of vulnerable and endangered species such as sharks. This can be achieved by attaching economic value to wildlife and by educating tourists about the need for conservation (Bookbinder, Dinerstein, Rijal, Cauley, & Rajouria, 1998). Balancing the relationship between wildlife, tourist, operator and conservation is important (Dobson, 2006). Higham (1998) investigated tourism to the Royal Albatross Colony in Taiaroa Head, New Zealand and argues that there is a need for sound site-specific management and continued longitudinal research into the impacts of tourism on various forms of wildlife. Some recent examples of the growing amount of research focusing on the area of marine wildlife tourism are presented in Table 3.1.

Table 3.1: Examples of recent studies conducted on marine wildlife tourism

<b>Types of studies</b>	<b>Authors</b>
Marine wildlife tourism (general studies)	Zeppel and Muloin (2008b; 2008c); Miller (2008); Higham and Lück (2008b); Lück (2008a)
Penguin watching	Seddon and Ellenberg (2008)
Pinniped watching	Newsome and Rodger (2008)
Polar bear watching	Lemelin and Dyck (2008); Lemelin (2008)
Shark watching	Brunnschweiler and Earle (2006); Brunnschweiler (2009); Dobson (2008); Dearden et al. (2008); Lobel (2008); Jones, Wood, Catlin, and Norman (2007); Catlin and Jones (2009); Catlin, Jones, Norman et al. (2010); Catlin, Jones, Jones et al. (2010); Dicken and Hosking (2009)
Whale and dolphin watching	Lück (2003a; 2003b); Higham and Lusseau (2007; 2008); Stamation et al. (2007); Malcolm and Duffus (2008); Constantine and Bejder (2008); Forestell (2008)

### 3.6 Scuba diving and scuba-dive tourism

Given the nature of the activity under investigation in this study (i.e. shark diving), it is important to discuss the areas of scuba diving and scuba-dive tourism. Interest in the underwater world has existed for millennia, and through curiosity and the need for food, humans have been venturing beneath the surface of the Earth's seas for thousands of years (Graver, 2003). In modern times, there are essentially three forms of recreational diving activities: free diving, snorkelling and scuba diving (Graver, 2003). Free diving and snorkelling only require a minimal amount of equipment (i.e. a mask, snorkel and fins), whereas scuba diving requires much more equipment (for example, portable air supplies, buoyancy-control devices, regulators, wetsuits, fins and masks) (Graver, 2003). Scuba diving is one of the world's fastest growing sports and in recent years has seen an enormous increase in the amount of divers participating (Stolk, Markwell & Jenkins, 2007; Bennett, 2002).

Those serious about scuba diving, and who wish to participate in an organised way, are required to undergo formal training and must complete a course accredited to an internationally recognised diving association (Mountain, 1998). Without accredited recognition of an acceptable diving qualification, divers will not be allowed to dive at a reputable diving centre anywhere in the world. There are a number of associations around the world responsible for establishing and maintaining standards of diving instruction, training accreditation and certification but the two most popular are The Professional Association of Diving Instructors (PADI) and The National Association of Underwater Instructors (NAUI) (The Scuba Guide, n.d.). According to their worldwide certification history statistics, PADI alone has certified 18,459,295 divers (PADI, 2009). A snapshot (in blocks of five years) of these statistics from 1967 (PADI's beginnings) to 2009 is provided in Table 3.2 in order to demonstrate the significant increase in the popularity of scuba diving over the span of 42 years. This table includes the number of certifications issued per year, cumulative certification and the percentage growth. Certified-diver statistics from NAUI are not available but they claim to be the largest non-profit diver-training organisation in the world (NAUI, 2008).

Table 3.2: PADI worldwide certification history



*This image has been removed by the author of this thesis for copyright reasons*

Orams (1999) argues that the single most important invention, within the context of marine tourism, has been the self-contained underwater breathing apparatus (SCUBA), not only because it has allowed humans to breath underwater and has resulted in a multibillion dollar industry, but more importantly because it has facilitated a change of attitudes about the marine world. The recreational activity of scuba diving has existed for at least 75 years but travelling to places for the sole purpose of engaging in the activity only gained popularity during the second half of the twentieth century (Garrod & Gössling, 2008a).

Scuba-dive tourism is comprised of “persons travelling to destinations with the main purpose of their trip being to partake in scuba diving. The attraction of the destination is almost exclusively related to its dive quality rather than any other factor” (World Tourism Organization, 2001, p. 85). Despite the fact that only one in three divers regularly take an overseas diving holiday (Garrod & Gössling, 2008a), scuba diving is growing in popularity and in significance as a tourism and recreational activity in many countries (Rouphael & Hanafy, 2007; Stolk et al., 2007) and is attracting tens of millions of people and generating revenues in the billions each year (Meisel-Lusby & Cottrell, 2008).

Scuba-dive tourism has been classified among a variety of other forms of tourism, for example marine (Jennings, 2003), sport (Ritchie, 2005), and natural area (Newsome et al., 2002). It has also been described as an adventurous holiday activity (Buckley, 2010, 2006; Garrod & Gössling, 2008a; Musa, Latifah & Lee, 2006; Swarbrooke, Beard, Leckie & Pomfret, 2003). In fact, adventure is among the multitude of factors that motivates scuba divers to take diving trips (Dimmock, 2010; Garrod, 2008; Tschapka, 2006; Bennett, 2002).

Research dedicated strictly to the area of scuba-dive tourism began 20 years ago (e.g. Tabata, 1991), although in the early days only a handful of studies were conducted (e.g. Davis & Tisdell, 1995, 1996; Shackley, 1998; Van Treeck & Schuhmacher, 1998). In the past decade, Garrod and Gössling (2008b) dedicated a book entirely to the area of scuba-dive tourism and some researchers have focused on topics within the industry such as management and impact issues, as well as gaining insights into scuba-dive tourists' characteristics. Garrod and Gössling (2008b) produced their text in order to address issues surrounding the scuba-dive tourism experience, the environmental, economic and social impacts of scuba diving, and the management of diving tourism. They argue that given the significance of diving, in terms of both current numbers and projected future growth, it is surprising that the topic of diving tourism has been of little interest to the scientific community. In view of the fact that there has been a paucity of scientific literature on diving tourism, the authors felt an edited book on this subject matter was warranted (Garrod & Gössling, 2008b).

Fitzsimmons (2008) conducted research focusing on determining attributes of pristine coral reef areas and associated resort facilities that most greatly contribute to tourists' enjoyment on a diving holiday. Her intention was to identify management options that were most likely to be effective for the optimisation of both sustainable reef use and diver enjoyment. The ultimate goal of Fitzsimmons' (2008) research was to propose specific management strategies for the dive industry in order to limit direct negative impacts upon reefs in remote areas.

Thapa, Graefe, and Meyer (2005; 2006) examined impacts of scuba diving on coral reef ecosystems. Given the interest in coral reefs among divers and the global growth in diving, concerns about negative impacts on these reefs have grown. The authors argue

that there is a need to better understand the diving community in terms of its environmental knowledge and subsequent behavioural actions. Thapa et al. (2005; 2006) argue that 60% of the world's reefs are under threat and a way to minimise the impact is through environmental education about the marine ecosystem, which, according to the authors, is fundamental in the promotion of responsible behaviour.

Townsend (2003; 2008) believes that environmental education is an effective way of managing diving tourists' behaviours and minimising impacts to marine environments. She argues that environmental education is potentially the best way to reduce damage to a dive site without jeopardising the enjoyment by the maximum possible number of divers. Townsend (2003; 2008) contends that dive operators can also improve tourists' experiences by delivering good information about dive skills and the site, as well as about the environment.

Medio, Ormond and Pearson (1997) conducted a study, in the Ras Mohammed National Park (Sharm el Sheikh, Sinai, Egypt), on the effect of briefings on rates of damage to corals by divers and found that environmental education, through informative pre-dive briefings, can be an effective tool in reducing divers' physical impacts on corals. In another study looking at diver behaviour and the management of impacts on coral reefs, Barker and Roberts (2004) found that educational briefings are an effective way to reduce damage caused to reefs by divers. They argue, however, that in addition to briefings, underwater intervention by dive masters is necessary, when they see divers causing damage to coral reefs. Uyarra and Côté (2007), in their study on the impacts of diving on corals, contend that the use of pre-dive briefings, along with dive master intervention, minimises the amount of damage caused to corals by divers.

The need to better understand the diving community (Thapa et al., 2005, 2006) is another important area that has captured the attention of researchers in the past decade. Meisel-Lusby and Cottrell (2008) conducted a study in order to increase understanding of diver socio-demographics, including previous dive experience and their motives for and expectations of diving. They argue that this increased knowledge can help operators better appreciate this group of tourists and help them to offer more efficient and successful diving programmes. Providing scuba divers with extra knowledge and information will also increase their overall diving experience (Meisel-Lusby & Cottrell, 2008).

Other studies have also looked at various aspects of scuba divers. Musa, Seng, Thirumoorthi, and Abessi (2011), for example, examined the influence of personality, experience and demographic profile on the underwater behaviour of scuba divers in Malaysia. MacCarthy, O'Neill and Williams (2006) explored the concept of customer satisfaction in relation to the scuba diving consumption experience. Their findings illuminate the fact that dive consumption experiences are both diverse and complex. Musa et al. (2006) conducted an empirical study to identify the demographic profile of scuba divers in Layang Layang, Malaysia, and to measure various aspects of their satisfaction. Musa's (2002) study identified the profile of divers, in Sipadan, and examined their overall satisfaction and the determinants of their satisfaction. Stolk et al. (2005) examined divers' perceptions of artificial reefs as scuba diving resources in Australia and Ditton, Osburn, Baker and Thailing (2002) looked at divers' demographics, attitudes and reef management preferences in offshore Texas waters.

Dicken and Hosking (2009) contend that it is critical that the dive-tourism industry better understands the diving community. They argue, in their study on diving with tiger

sharks (*Galeocerdo cuvier*), that understanding socio-economic aspects, including information on diver expectations, experiences and expenditure, is necessary for the effective management of the Aliwal Shoal Marine Protected Area, on the east coast of South Africa. Such information is essential not only in estimating the economic value of tiger shark diving to the sustainability of the dive location and the local communities, but also for the sake of developing and maintaining a sustainable tiger shark diving industry (Dicken & Hosking, 2009).

Despite these examples of research being conducted in the area of scuba-dive tourism, a lack of scientific research in the field still generally exists (Garrod & Gössling, 2008b).

### **3.7 Sharks**

Sharks are often portrayed and viewed as mysterious and menacing cold-blooded killers (Palmer & Kimball, 2010; Parker & Parker, 1999) and media, such as movies, television and newspapers, contribute to these images (e.g. AAP, 2009a, 2009b; Adams, 2007; Benchley, 2004; Reuters, 2007; The Associated Press, 2008). Television programmes, such as *Shark Week* on the Discovery Channel, often mislead audiences and reinforce preconceived notions of sharks (Palmer & Kimball, 2010). Instead of seeking to educate audiences about the realities of sharks, these shows focus only on presenting graphic, sensationalised images of animal violence (Palmer & Kimball, 2010). Although sharks are predatory creatures, they rarely come into contact with humans. Despite an increase in humans pursuing aquatic recreational activities, in particular swimming and surfing, there are only, on average, 63 shark attacks per year worldwide (The International Shark Attack File, 2009).

Total shark populations around the world have been declining at a rapid pace (Heithaus, Frid, Wirsing, & Worm, 2008; Stewart, 2007a). For example, hammerhead sharks (*Sphyrna* species) and large coastal shark species of the *Carcharhinus* genus (for example, dusky, night and silky sharks) have declined precipitously in the last two decades (Baum & Blanchard, 2010). According to the IUCN (International Union for Conservation of Nature) Red List of Threatened Species, there are currently 41 sharks listed as vulnerable, 12 as endangered, and 15 as critically endangered (IUCN, 2011). The two main reasons for this decline in shark populations are overfishing by directed fisheries, which rapidly expanded in the 1980s, and by-catch in pelagic long-line fisheries from the 1960s onward (Baum et al., 2003). In fact, The Shark Alliance, a coalition of non-governmental organisations dedicated to the conservation of sharks, estimates that one hundred million sharks and closely related rays are killed each year in fisheries, either intentionally or as by-catch (The Shark Alliance, 2006; Topelko & Dearden, 2005).

Benchley (1998) highlighted the serious threat facing sharks by claiming somewhere between 40 and 70 million were killed in 1994 alone. The International Shark Attack File (2006), estimates that the shark-fin industry kills 73 million sharks per year. Insufficient public support, often stemming from the negative image of sharks, acts as an obstacle for these animals to receive the proper management priority and conservation they require. There is a need to educate the public in order to achieve these management and conservation goals. Non-governmental agencies, such as The Shark Alliance, can act as catalysts in educating people and in turn demystifying the negative representations of sharks, especially those created by the media. Government agencies, tour operators, tourists and the media, through responsible and accurate reporting, can all help to educate people on the realities of sharks.

Humans are not born with a fear of sharks; rather they are conditioned to be afraid through their environment and culture (Peschak, 2006). Reactions to recent incidents in Egypt, in June 2009 and December 2010, where two tourists were killed and four others injured, demonstrate how newspaper articles can potentially increase the public's apprehension towards sharks (BBC News, 2010; Hines, 2009). Media sources must ensure that their reporting on sharks is done in an accurate and responsible manner. Once people understand the true nature of sharks, fear can be replaced with interest, admiration and caring (Rochat, 2006). The theme of education keeps resurfacing as an important component in communicating messages to the public regarding management and conservation issues in various environments. Although the overexploitation of shark populations continues, attempts, particularly through the medium of documentaries, have been made to try and reverse this trend (e.g. Dalton-Hagege & Steer, 1999; Stewart, 2007b). The shark tourism industry, if managed properly, also has the potential to assist in the conservation of sharks (Dalton-Hagege & Steer, 1999).

### **3.8 Shark tourism**

Shark tourism is a recreational activity whereby tourists travel to destinations in order to watch, swim alongside, touch and feed sharks (Carwardine & Watterson, 2002). Although some sharks can be viewed easily from the surface with a mask and snorkel, the majority of shark-watching ventures require that individuals enter the water with scuba equipment (Topelko & Dearden, 2005).

The shark tourism industry began slowly and on a small scale in the late 1960s and early 1970s when a few pioneering dive operators in the Maldives and Bahamas began taking recreational divers on organised shark encounters (Carwardine & Watterson, 2002). Previously considered to be only for adventure tourists, shark experiences have now

become widely accessible (Cains & Dobson, 2008). Diving with sharks has become a fast-growing industry worldwide with an estimated 500,000 people participating in the activity each year (Cains & Dobson, 2008; Topelko & Dearden, 2005). Along with this increased growth in shark tourism, there are also controversial issues surrounding the industry, for example, the disturbance to natural environments, the risk of injury and possibly death, and the issue of attracting sharks by releasing bait or a liquid mash (chum) of ground-up small fish, such as herring or mackerel, into the water (Carwardine & Watterson, 2002). Nevertheless, there are those who argue that if planned and managed properly, shark tourism can benefit both local economies and the sharks, providing an alternative to shark hunting and in turn making them worth more alive than dead (Cains & Dobson, 2008; Carwardine & Watterson, 2002; Dobson, 2008).

Shark tourism has experienced increased interest from tourists in recent years (Dobson, 2006) and one of the main reasons for this is because of people's changing perceptions towards sharks (Dearden et al., 2008). Dearden et al. (2008) conducted a thorough review of the magazine *Skin Diver*, which reports on scuba-diving trends, to gauge these changing perceptions, especially among the greater diving population. Based on their review, they devised a timeline outlining the evolution of diver perceptions towards sharks, beginning with the year 1974.

During the period from 1974 to 1984 there was a general consensus that humans need protection from sharks. From 1985 to 1992 the idea of diving with sharks gained in popularity. There was a shift in emphasis from shooting sharks with lethal weapons to shooting them with underwater cameras. The years 1993 to 1998 witnessed an increase in actual numbers of individuals participating in shark diving and thus prompting many shark dive sites around the world to begin advertising the availability of this activity

(Dearden et al., 2008). Between 1999 and 2002, people began viewing sharks more positively and there was a growing realisation of the serious need to protect them. In the current period, of 2003 and beyond, divers are looking more for an interactive experience. They are no longer content just watching, they want to be more involved in the action (Dearden et al., 2008).

Despite the rapid growth in shark-based tourism, it has attracted relatively little academic interest (Dobson, 2007), especially as related to predatory sharks. The first studies in the area focused mainly on shark tourism related to whale sharks (*Rhincodon Typus*) (e.g. Davis et al., 1997; Davis & Tisdell, 1998a, 1998b). These studies looked at aspects such as management issues relating to diver-to-shark distances, willingness to pay, the appropriate number of operators, and the use of regulation, self-regulation and economic instruments. A decade later, Catlin and Jones (2009), Catlin, Jones, Norman et al. (2010), and Catlin, Jones, Jones et al. (2010) continued exploring whale shark tourism in Ningaloo Marine Park in Western Australia. The main topics examined in these studies were tourist expenditures and the economic impacts of the activity on the region, and the different sources of information used by tourists to learn about whale shark tourism in Western Australia. Another recent study explored the development and socio-economic impact of whale shark tourism in the Seychelles (Rowat & Engelhardt, 2007). The authors argue that this form of tourism has the potential to earn the country US\$4.99 million for a 14-week season but community involvement is a key element for the industry's success.

Two of the earliest studies to focus on predatory sharks explored the shark diving industry in the Maldives (Anderson, 1998; Anderson & Waheed, 2001). They explored the economic importance of shark diving to the island nation and found that money

spent by shark divers amounted to some \$2.3 million per year (Anderson, 1998; Anderson & Waheed, 2001; Cains & Dobson, 2008). Shark diving was seen as a potential way of protecting sharks because these species are now worth more alive than dead (Anderson, 1998). Another recent study on predatory sharks examined whether the economic value attached to shark watching can provide enough incentive to reduce overfishing (Topelko & Dearden, 2005). The authors argue that although this industry has the potential to generate considerable income and contribute to the conservation of some shark species in various locations (for example, Seychelles, Australia and South Africa), overall the economic incentives do not appear to be lucrative enough to encourage a reduction in fishing appropriate to the scale of the threat facing sharks (Topelko & Dearden, 2005).

Dobson (2006) explored shark tourism by using a case-study approach to assess the issues that surround the introduction of state regulations in South Africa and Florida in order to manage the industry in those locations. He argues that there are complex issues facing those responsible for implementing state regulatory frameworks and that many problems still remain regarding using state regulation as a way to solve shark tourism issues. Johnson and Kock (2006) and Laroche, Kock, Dill, and Oosthuizen (2007) examined the great white cage-diving industry and the issue of these animals becoming conditioned as a result of chumming or feeding. They argue that moderate levels of ecotourism probably have only a minor impact on the behaviour of white sharks and that shark diving can be beneficial for the target species.

Dobson (2007) explored the nature of the shark diving experience by conducting in-depth semi-structured interviews to determine the appeal that sharks have as wildlife attractions and the feelings generated by participants through close contact with sharks

in their natural environment. He claims that exposing tourists to sharks is a potentially effective way of enhancing people's attitudes towards the animals. Dobson (2008) examined the controversy surrounding chumming or feeding as well as tourism's potential contribution to the conservation of sharks. In this study he contends that exposing the public to sharks is probably one of the most significant contributions that marine wildlife tourism can make towards the conservation of sharks.

A recent study in the area of (predatory) shark tourism (Brunnschweiler, 2009) occurred in the same research location as the current thesis, but with a different focus. Brunnschweiler (2009) examined an ecotourism project based on diving with sharks that has been designed to protect a small reef patch and its fauna while preserving the livelihood of local communities. The project involves local villages foregoing their fishing rights in the marine reserve in exchange for user-fees as a new source of income. According to Brunnschweiler (2009), the project is self-sustaining and profitable and an example of a privately initiated, bottom-up approach that includes relevant local stakeholders.

Another recent study explored socio-economic aspects of tiger shark diving within the Aliwal Shoal Marine Protected Area in South Africa (Dicken & Hosking, 2009). The authors argue that to manage shark tourism in this area effectively, it is important to understand socio-economic aspects of the participants, including information on their expectations, experiences and expenditures. Dicken and Hosking's (2009) study is particularly timely to this thesis because it is the first in the area of (predatory) shark tourism to begin delving more deeply into understanding the shark diving community.

### **3.8.1 Shark feeding**

Provisioning, or shark-feeding (the luring of sharks through chumming or feeding in order to guarantee sightings), has emerged as a controversial topic within the realm of shark tourism (Brunnschweiler & Baensch, 2011; Fitzpatrick et al., 2011; Clua, 2010; Clua et al., 2010; Lobel, 2008; Carwardine, 2004). The idea of close proximity is a key feature of the wildlife tourism experience and thus food is often provided in order to achieve closer views of and contact with animals (Clua, 2010; Clua et al., 2010; Curtin, 2010; Vignon et al., 2010; Newsome et al., 2004). Despite its ongoing use, wildlife feeding is a highly contested practice and a concern to some wildlife managers and tour operators (Curtin, 2010; Lobel, 2008; Newsome et al., 2004; Rodger et al., 2007). Within the shark diving industry there are two competing approaches: one involves ‘chumming’ to attract sharks artificially, and the other involves natural observations without feeding (Carwardine, 2004; Lobel, 2008). Natural shark sightings are surprisingly few and far between, and for some shark diving locations around the world, the only way of guaranteeing clients the opportunity to view sharks is by luring them to the dive area (Brunnschweiler & Baensch, 2011; Knight, 2009; Philpott, 2002).

Feeding sharks to encourage sightings has generated a great deal of debate in recent years, particularly around both shark and human welfare (Cater, 2008; Dobson, 2008). Jackson (2000) contends that there are conservationists who believe feeding fish alters feeding behaviours, affects their health, makes them dependent on divers, and could attract more dangerous predators. Other stakeholders, he argues, believe that feeding does not alter long-term behaviours nor does it have any other profound impacts. Those that argue against shark-feeding likely feel that it is most sensible to be precautionary and discontinue this practice whereas those who argue in favour likely feel that even

though feeding may not be the most desirable action to take, for the sake of shark conservation it is better than other alternatives.

Shark-feeding can cause panic among marine recreation users and local residents where the activity takes place, and so is one of the unique issues related to shark tourism (Dobson, 2006). Burgess (1998) opposes the idea of shark-feeding because it is potentially detrimental to both divers and sharks. His opposition stems from the following interrelated factors: the safety of the diver; the likelihood for negative publicity directed at sharks if one bites a diver during a dive; the possibility of ecological disruption; and potential negative impacts on multi-user recreational use of the feeding area.

Philpott (2002) states that many shark conservationists strongly support limiting shark-feeding operations and feels that the problem with these types of tours is that they can alter natural shark behaviour, making them associate food with human presence, and thus potentially increase incidences of attacks. An example of a strong initiative that was implemented by an organisation against the feeding of sharks for tourism purposes is the Florida Fish and Wildlife Conservation Commission's decision, in September 2001, to ban all operators from using bait to lure sharks (Philpott, 2002).

Witt (2004) contends that feeding and chumming can be detrimental to sharks, in particular the great white. He claims that those stakeholders concerned about the well-being of the great white feel that chumming, which is being used in the cage-diving industry, may cause these sharks to remain in unsuitable areas during seasons when they would normally be elsewhere. There are also concerns that white sharks may become habituated and start associating humans and boats with food.

McAvoy (2009) highlights the fact that shark-watching tours, which involve chumming, have become a popular visitor attraction in Hawaii but at the same time the sentiment among some local stakeholders is that they should be shut down. For some native Hawaiians, sharks are viewed as ancestral gods and thus feeding them for entertainment purposes is disrespectful to their culture. Some other individuals, such as surfers and environmentalists, feel that shark-feeding tours will teach sharks to associate people with food, leading to an increase in attacks, while disrupting the ecological balance of the ocean.

More recent researchers have also analysed the negative impacts of shark-feeding. Knight (2009), for example, argues that attracting wild animals for tourism purposes causes habituation and antipredatory behaviour. He claims that human-animal contact does not stop within wildlife tourism settings and can spill over beyond the viewing site to the wider locality where animals can cause damage and other problems. Clua et al. (2010) contend that shark-feeding can modify the natural behaviour of sharks, for example causing them to favour inbreeding, as well as potentially increase their aggression towards humans. Smith et al. (2010), in a study on grey nurse shark (*Carcharias taurus*) diving tourism, found that provisioning may cause long-term disturbances to the animal's resting, feeding and reproductive behaviours.

Fitzpatrick et al. (2011) conducted a study to determine the impacts of provisioning on the behaviour of whitetip reef sharks (*Triaenodon obesus*). They concluded that it is not possible to conclusively determine whether the current level of tourism, at Osprey Reef in the Coral Sea, Australia, significantly affects whitetip reef sharks' long-term health and behaviour. Based on their findings, they argue that feeding sharks frequently, i.e. on a long-term daily basis, can potentially have significant negative effects on the animal's

metabolic rates, net energy gain and overall health, reproduction and fitness. Although these authors have highlighted some of the negatives, they also caution that empirically little is still known about the true impacts of shark-feeding and that much more research is required.

Ugnow (2002) presents research that concluded that feeding sharks during cage dives appears not to condition them or have any worrying effects on their behavioural patterns. In South Africa, some researchers have concluded that it is unlikely that sharks associate humans with food (Ugnow, 2002). Some scientists and researchers believe shark-feeding can be beneficial and that the shark tourism industry is a good way to conserve sharks species (Smith, 2009). There are those who argue that a live shark (used for tourism purposes) is worth much more than a dead one (Anderson, 1998; Cains & Dobson, 2008; Smith, 2009). Although feeding wild animals is generally frowned upon, Smith (2009) favours shark-feeding because it brings in a lot for an economy and acts as a conservation tool for sharks.

Johnson and Kock (2006) are in favour of shark tourism and feeding because it can be beneficial for the sake of conserving sharks. This type of tourist activity can act as a conservation tool by enabling wildlife to generate income purely by its existence as a viewing spectacle. Johnson and Kock (2006) claim that the immediate assumption that cage diving will cause an increase in shark attacks due to conditioning (i.e. the possible association of humans with food) is unfounded. They argue that because sharks have such limited exposure to chumming they do not currently associate cage-diving boats with food and it is unlikely cage diving is linked to attacks on humans (Johnson & Kock, 2006). If regulations and codes of conduct are put into place and followed by

operators, shark diving in no way augments the small risks that sharks represent to humans (Johnson & Kock, 2006).

Researchers within the past two years have also analysed some of the positives related to shark-feeding. Brunnschweiler and Baensch (2011) acknowledge the fact that provisioning is a controversial topic but argue that public debate over baiting sharks for marine tourism is largely based on inference, opinion and anecdote, primarily due to a lack of baseline data on variables such as seasonal cycles and long-term trends in abundance of sharks associated with such activities. They contend that shark tourism contributes millions of dollars annually to local and regional economies. Findings in their study on shark diving in Fiji show that shark-feeding operations can be used to collect relative abundance data that could serve as a crude monitoring instrument for conservation purposes.

Based on their study on Caribbean reef shark (*Carcharinus perezii*) tourism in the Bahamas, Maljković and Côté (2011) suggest that provisioning does not necessarily influence animal behaviour in detrimental ways. They believe that provisioning, when carefully conducted, has the potential to be an effective strategy that can contribute to apex predator conservation. Gallagher and Hammerschlag (In Press) argue that responsible shark tourism can benefit research and conservation and since many shark species are long-lived, these natural resources may accrue revenue over extended periods of time, thus providing potential benefits to local economies that can last decades and beyond. Clua (2010) claims that one of the positive aspects of shark-feeding is the profit it generates. In addition, he believes that shark tourism is positive because it helps low-density species to meet and thus reproduce and because it is a useful tool for promoting the concept that sharks are not killing machines. Despite these

authors claiming that shark-feeding can be positive, they too acknowledge the fact that much more research is required in order to determine the true impacts of provisioning sharks for tourism purposes.

### **3.9 Summary**

This chapter has reviewed areas in the literature relating to wildlife tourism, with particular focus on marine tourism, marine ecotourism, marine wildlife tourism, scuba diving and scuba-dive tourism, sharks and shark tourism. A number of issues are prominent in these areas, ranging from the management of tourism operations and the conservation of wildlife to moral dilemmas stemming from the practice of providing food (i.e. feeding, chumming, baiting, luring) to the animals for tourism purposes. Two specific issues, which have recurred in a number of studies listed in this chapter and which are central to this thesis, are the use of education and interpretation by tourism operators and better understanding the diving community. These two issues are important within the realm of wildlife tourism and have witnessed increasing attention from academic researchers in the past ten years.

## CHAPTER 4 — Methodology

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### 4.1 Introduction

This chapter will describe the methodological approaches used to achieve the aims and related research questions of the thesis. The research locations will be justified, the data processing and analyses described, and some limitations of the study presented.

### 4.2 Justifications for choosing the research locations

Inadvertent sightings of sharks are common while diving on the many reefs throughout Fiji. Guaranteed and intentional shark encounters, however, occur at two main diving locations: within the Beqa Lagoon, located just out of Pacific Harbour on the main island of Viti Levu, and around Mana Island (one of the Mamanuca Islands), located just west of Lautoka (see Figure 1.2). At these locations there are four operators offering shark diving opportunities; three are based in Pacific Harbour, a shark diving destination which has been in existence for just over a decade (Dive the World, 2010) and one on Mana Island. Pacific Harbour is a small town which has marketed itself as the adventure capital of Fiji due to the range of adventure tourism opportunities that exist within the immediate vicinity, for example, surfing, white-water rafting, kayaking and scuba diving (Buckley, Johnson & Ollenburg, 2006).

One of the main reasons for choosing Fiji, and in particular Beqa Lagoon, as a destination in which to conduct this study is because its intention is to examine the topic of shark diving in a location that has been of limited focus in tourism academic research. Although shark diving studies have emerged in Fiji, in the past few years, (see Brunnschweiler & Baensch, 2011; Brunnschweiler, 2009; Brunnschweiler & Earle,

2006), the majority have focussed on other locations such as South Africa and Australia (e.g. Catlin & Jones, 2009; Dicken & Hosking, 2009; Laroche et al., 2007; Dobson, 2006; Davis & Tisdell, 1998a; Davis et al., 1997). The fact that commercial shark diving in Beqa Lagoon has been in existence for a relatively short period of time inspired the researcher to explore this location because of the potential to shed light onto a new subject area, based on a new location, within the realm of tourism research. The logistical simplicity of Fiji and Pacific Harbour, i.e. having the three shark dive operators all based in one location, also made this area the most feasible in which to conduct the entire study, particularly due to the researcher's limited time and financial budget. Thus the operators working out of the Pacific Harbour area were the only ones investigated in this study.

Once the shark diving destinations in Fiji were located, all the operators in both locations were contacted. Initial contact was by an email from the researcher that introduced himself and the research project and asked for permission to conduct research on the operators' premises. Initially only one operator seemed eager to be a part of this research project; the others did not reply. Eventually the two other operators situated in Pacific Harbour did reply, but the one on Mana Island never did, even after several follow-ups. Therefore, only the three dive operators situated in Pacific Harbour were used for the data-collection phase of this study. The three operators all gave their consent and indicated their desire to be part of the research. In the ethics application for this research it was stipulated that the identity of the operators would be kept anonymous. They will therefore be referred to as *Operator One (O1)*, *Operator Two (O2)*, and *Operator Three (O3)* rather than by their real names. The two larger operators, *O1* and *O2*, run very similar day-trip operations, whereas the third, *O3*, offers a seven- to ten-day 'live aboard' experience. *O3*'s main office is based in Pacific

Harbour but its tours depart from the north-western coastal town of Lautoka (see Figure 4.1).

Figure 4.1: Operators' diving locations



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*OI* is a foreign-owned business located in Pacific Harbour. According to its manager, *OI* began its operation in Fiji in 1985, offering coral and wreck diving. In the 1980s *OI* pioneered shark diving in Fiji but it was not until 1997 that it began its shark dive, on Lake Reef in the Beqa Lagoon, just off the mainland at Pacific Harbour (see Figure 4.2). At the time of its start-up, customary rights dictated that reefs were owned by local village clans and *OI* required permission to run its shark dive operation. Although reluctant at first, the village owning the rights to Lake Reef eventually decided to cooperate with *OI*; the village also had the shark dive site declared a marine reserve, the Lake Reef Marine Reserve (LRMR), in which no fishing is permitted.

Figure 4.2: *O1* and *O2*'s dive sites

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In exchange for their cooperation, *O1* charges each diver a levy. The money collected is given, in full, directly back to the village, which uses it for education programmes and community improvements. *O1* also provides members of the local village, whenever possible, with employment training and job opportunities. *O1* employs eight staff members and, with the exception of the dive-site manager who is foreign born, all come from various parts of Fiji. The local village, through trained wardens, also assists *O1* by patrolling LRMR, ensuring that the 'no fishing' rules are enforced and thus protecting the wildlife that is attracted to the dive site.

*OI*'s shark dive is available to any qualified diver on Mondays, Wednesdays, Fridays and Saturdays, year round. *OI* operates a 33-foot custom-built dive vessel with a capacity for 16 divers and eight staff/dive masters. It averages six divers per trip and the cost per trip is FJ\$250 (US\$135 on 6 January 2011) as well as the additional FJ\$15 (US\$8 on 6 January 2011) customary rights levy which is charged to each diver. Full gear hire is also available for an additional FJ\$20 (US\$11 on 6 January 2011) per day. Complimentary tea, biscuits and refreshments are offered on board the boat during surface intervals. The trip comprises a 30-minute-return boat ride to and from the dive location and two dives, each lasting approximately 45 minutes, with a one-hour surface interval between the dives. For the first dive, divers are taken to two different depths below the surface: 25 metres for the first 20 minutes and then to 15 metres for the remainder of the time. For the second dive, divers are taken to a depth of 15 metres for the whole 45 minutes. A dive trip lasts approximately three hours; divers are transported from the dive shop to the dive location at 9:30 a.m. and return at 12:30 p.m.

*OI*'s shark dive is an open-water shark feed and no cage is used. Sharks and other fish feed directly from the hand of an experienced dive master and from a bin of discarded fish, while divers observe the spectacle. Divers may encounter up to eight different species of sharks as well as a variety of other fish and marine wildlife on any given excursion. Once back at the dive shop, divers are given towels and an opportunity to shower, clean up, return any hired gear, and get their diving logbooks filled in and stamped. Every trip is video recorded by a dive master and a DVD is available for purchase following each trip.

*O2* is also a foreign-owned business located in Pacific Harbour, in close proximity to its competitor, *OI*. According to its manager, *O2* began operations in 1998, offering coral

and wreck diving as well as their own version of a shark dive on Shark Reef, in Beqa Lagoon (see Figure 4.2). *O2* sought and received permission from the two local villages who own Shark Reef to conduct their shark dive. Both villages agreed to relinquish their fishing rights within the reef and it was also declared a marine reserve, the Shark Reef Marine Reserve (SRMR). In exchange for their cooperation, *O2* collects a levy from each diver which is given, in full, directly back to the villages. *O2* provides members of the local villages, whenever possible, with employment training and job opportunities. It sponsored the training of twelve wardens, from the local communities, so that SRMR can be monitored continuously. *O2* employs fourteen staff and all but the foreign-born manager come from Fiji, the majority from nearby villages.

*O2* offers its shark dive to qualified divers on Mondays, Tuesdays, Thursdays and Saturdays, year round; however, demand ultimately dictates how many days the boat is actually taken out. Guests are transported to and from the dive site aboard a 35-foot catamaran, which was built in New Zealand in 2004. The boat can carry 22 persons, but on a high-demand day *O2* limits the number of guests on board to 14 per trip, along with six dive master guides. On average, *O2* carries about eight divers, along with six to eight guides, per trip.

*O2* offers two pricing options for their shark diving trips. The first is for one dive, which is FJ\$140 (US\$76 on 6 January 2011); the second is for two dives, which is FJ\$220 (US\$119 on 6 January 2011). There is also the levy of FJ\$20 (US\$11 on 6 January 2011) per diver, which goes directly to the villages that own Shark Reef Marine Reserve. Full gear hire is available for an additional FJ\$20 (US\$11 on 6 January 2011) per day. Like *O1*, *O2* provides complimentary biscuits, tea and refreshments on board during the surface interval. The trip comprises a 30-minute-return boat ride to and from

the dive location, then either one or two dives, each lasting about 45 minutes to an hour, with a one-hour surface interval between the first and second dive. The first dive is to a depth of 30 metres for the first 20 minutes and then back up to 15 metres for the remainder of the time. The second dive is to a depth of 15 metres for the whole time. The entire trip lasts about three hours, with divers being transported from the dive shop to the dive location at 9:30 a.m. and returning at approximately 12:30 p.m.

*O2's* shark dive is also an open-water shark feed without the use of a cage. A bin of discarded fish scraps is lowered into the water and sharks and various other species of fish are fed by an experienced dive master. At *O2's* dive location, divers can expect to see up to eight different species of sharks and a variety of other fish and marine wildlife. Once back at the dive shop, divers are given towels and an opportunity to shower, clean up, return any hired gear, and get their diving logbooks filled in and stamped. Each of *O2's* trips is video recorded by one of their dive masters, and a DVD is available for purchase following every trip.

*O3* is the third foreign-owned and operated business based in Pacific Harbour that was used in this research. *O3* runs a different dive operation from its two competitors: it operates a 120-foot motorsailer yacht, built in 1979, on which the company offers a luxurious sailing and scuba-diving experience. Its guests live and sleep on board, and can dive between three and five times a day. *O3's* seven-day package, which includes double-occupancy accommodation, all meals, scuba tanks, weights and unlimited air refills, costs FJ\$5790 (US\$3140 on 6 January 2011) plus a fuel surcharge, and its ten-day package, costs FJ\$8270 (US\$4485 on 6 January 2011) plus a fuel surcharge.

O3's yacht can accommodate up to 18 guests on board at any one time along with the four owners/managers and 10 crew members, who also all stay on board for the duration of the trip. The crew members are all Fijian and come from various parts of the country; their jobs include boat captain, chief officer, dive masters, chefs, stewardesses, and engineers.

All sailing trips commence in Lautoka and travel north-east up through the Bligh Water Passage, in between Fiji's two main islands of Viti Levu and Vanua Levu (see Figure 4.3). The ship then travels south towards the Nigali passage and then back up in a north-easterly direction towards Namena before heading back to Lautoka.

Figure 4.3: O3's main sailing route



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Some of the dive sites at which *O3* stop along the way include Mount Mutiny, Wakaya, Gau, Namena and E6, although alterations to trips and diving stops are quite often made due to weather conditions and diver requests. *O3*'s small-scale shark dive, which was initiated back in 1994, takes place in the Nigali Passage, between the islands of Gau and Nairai, just east of Viti Levu (see Figure 4.3). It is an open-water dive without the use of a cage. This dive, however, only makes up a small portion of its overall operation — usually one dive on one of the days, and weather permitting. *O3*'s shark dive is made available for those divers on board who are interested in participating. Grey reef sharks (*Carcharhinus amblyrhynchos*) are naturally concentrated at the dive site area, providing divers with the opportunity to view them up close without *O3* having to use bait to lure them in.

Although operating differently than *O1* and *O2*, *O3* was chosen for this study because it too offers a shark diving component and its headquarters are located in Pacific Harbour, in close proximity to *O1* and *O2*. Data collected from *O3* were on a much smaller scale in comparison to the other two operators. For this reason it was decided that rather than separating and comparing their data with those of *O1* and *O2*, they would all be analysed together. This approach was chosen because it was felt that it would be most effective in allowing the data to begin telling a collective story about a new subject area in a new location, i.e. shark diving in Pacific Harbour, Fiji. Future studies, however, could focus on making comparisons among dive operators.

### **4.3 Mixed methods research approach**

Mixed methods research has been gaining in acceptance among researchers and is becoming more common in studies across the social sciences (Creswell & Plano Clark, 2007). Mixed methods research involves combining quantitative and qualitative

approaches (Leech & Onwuegbuzie, 2009); it involves collecting, analysing and mixing these two approaches in a study or a series of studies (Creswell & Plano Clark, 2007; Creswell, Shope, Clark, & Green, 2006). Mixed methods research is generally an approach to knowledge (theory and practice) that attempts to consider multiple standpoints, perspectives, viewpoints and positions (Johnson, Onwuegbuzie, & Turner, 2007). Information coming from different angles is useful for corroborating, elaborating or illuminating the research problem (Decrop, 1999); it enables the researcher to zero in on answers and information sought (Oppermann, 2000). Although this research cannot claim to be a fully mixed methods one, the approach of mixing methods was considered when designing the methodological phase. This study is primarily exploratory and descriptive in nature and the tools used to collect valuable information included mainly the on-tour and follow-up (on-line) questionnaires (with a combination of quantitative and qualitative type questions in both) and, to a lesser extent, operator interviews as well as observations of and conversations with divers and operators.

#### **4.4 Sampling**

A population is a target group, an entire set of people or other entities, under investigation to which study findings are to be generalised (Colorado State University, 2010a; Schutt, 2009). Examples of a population might be all whale watchers or all scuba divers. The target population for this study was defined as ‘all international and domestic visitors aged 20 years and older participating in shark diving at the selected dive sites’.

The best way to know as much as possible about a group, and subsequently be able to make generalisations about the group, is to collect information from each and every person (de Vaus, 1995; Schutt, 2009). Researchers, however, rarely have the time or

resources to study entire populations (Schutt, 2009); instead researchers resolve to study a sample, a subset, of a chosen population. Attempts are made to select a sample population that is considered representative of all the groups of people to whom the results will be generalised and transferred (Colorado State University, 2010a). There are a variety of sampling techniques available to researchers, such as simple random, stratified random, systematic, cluster, non-probability, convenience and purposive (Schutt, 2009). The researcher chooses the appropriate technique for their study in order to achieve the best possible response rate.

Achieving a strong response rate is crucial for any survey. As de Vaus (1995, p. 107) notes, “one of the most common criteria by which a method is judged is the response rate it achieves.” In order to maximise response rates in this study, a variety of steps were taken. These steps included carefully designing and rigorously testing both questionnaires, starting email communication with each operator in order to build an initial rapport, in the hopes of gaining their confidence and respect, and the researcher travelling to Pacific Harbour, Fiji, for a period of six weeks, to collect the on-tour questionnaires and help further solidify, in person, the initial rapports made with the operators. Being present at the dive sites enabled the researcher to make personal contact with potential respondents, thus making the study more meaningful for them. Approximately eight months was spent collecting the on-tour questionnaires and sending reminders for the follow-up questionnaires. Having such an extensive data-collection period also helped in achieving high response rates. These steps could not all be implemented at *O3* and it was expected that they would generate the lowest response rates.

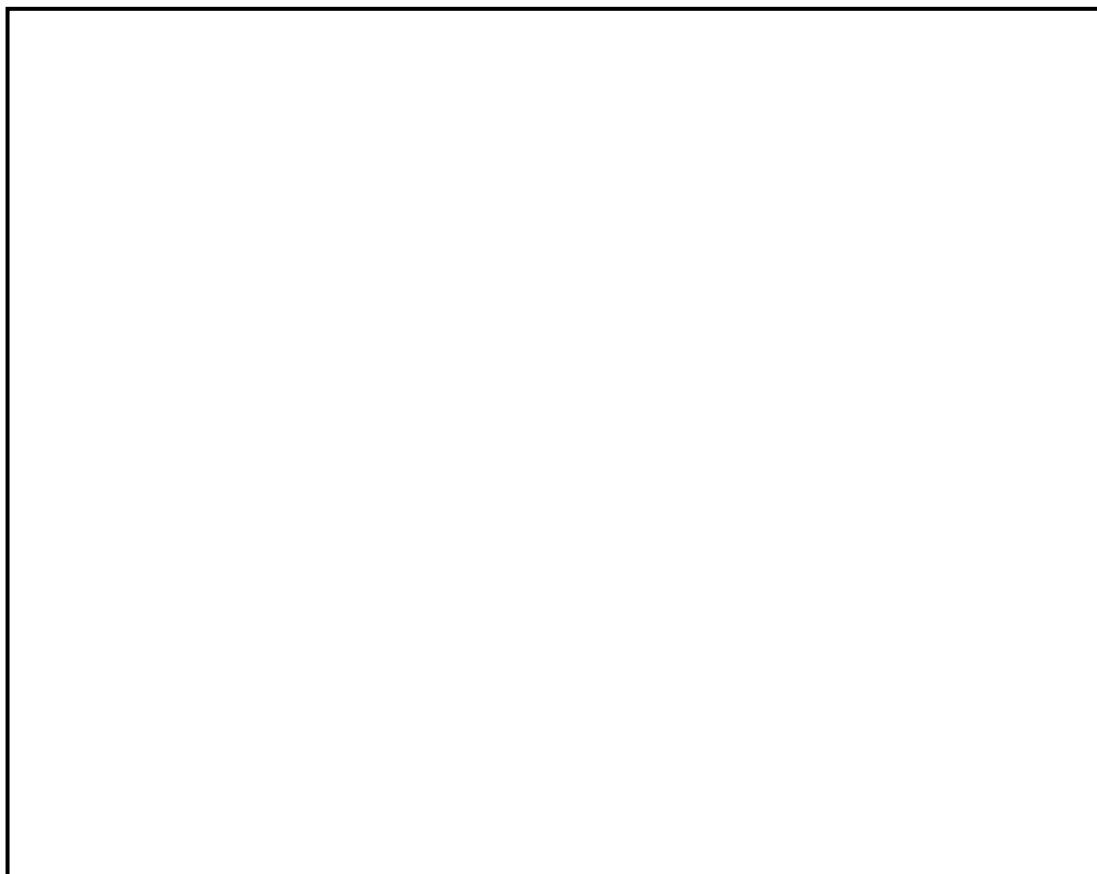
The sampling technique chosen for this study was convenience. Convenience sampling is using non-probability samples that are unrestricted (Adams, Khan, Raeside, & White, 2007). Clark, Riley, Wilkie, and Wood (1998) argue that convenience sampling takes on different meanings to different commentators on research methodology. They describe convenience sampling as quite literally taking as a sample whoever is available to receive the administration of the research instrument. In the case of this study, all divers (20 years and older) at the chosen shark diving sites who were willing to participate were surveyed. Although convenience samples are less reliable, they are the cheapest and easiest to conduct (Adams et al., 2007), making this type of sampling technique a suitable fit for this study. The researcher was constrained by a limited financial budget and under time pressures, especially during the on-tour data collection phase, and it was imperative that the largest possible numbers of questionnaires were collected in the least amount of time.

Determining the size of a sample, though difficult, is an important element in any survey research (Adams et al., 2007). Determining the right sample size in this study initially appeared difficult because there is a lack of available statistical information in the area of shark tourism in Fiji. There is also a limited amount of statistical information regarding the annual numbers of individuals participating in Fiji's overall scuba diving industry. Fiji Dive (2006) list 13 scuba diving regions (including live aboard operations) (see Figure 4.4) and some of the resorts and operators in Fiji; however they do not provide statistics regarding the number of visitors to these locations.

Fiji Me (2010) report that there are 63 resorts and operators providing scuba diving opportunities in Fiji but they too do not have scuba diving statistics. In order to compensate for the difficulty in determining a precise sample size for this study, rather

than having a preset target number prior to collecting data, the number evolved over the course of the data-collection period. Once it was deemed that the numbers were sufficient, data collection ceased. A termination date was also decided upon due to time pressures and financial constraints.

Figure 4.4: Scuba diving destinations in Fiji



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Once in Pacific Harbour, conversations with dive operators helped the researcher get a clearer estimate of the average number of shark divers they carry per trip annually. According to the dive operators, the annual average number of divers they carry is not severely impacted by factors such as seasonality and weather. Visitors seem to be attracted to these shark diving operations regardless of the time of year or weather. Fiji's water temperatures are usually high year round and because of its attractive coral and marine life there really is no bad season for divers (The Scuba Site, 2008).

*O2* carries an average of eight divers per trip, four trips per week; this equates to 32 divers per week, 1664 per year, or 1152 divers over this study's eight-month data-collection period. *O1* carries an average of six divers per trip, four trips per week; this equates to 24 divers per week, 1248 per year, or 864 divers over the eight-month data-collection period. *O3* runs one-week and ten-day charters with approximately 18 divers on board; this equates to 936 divers per year, or 648 over the study's eight-month data-collection period. The three operators combined carried 2664 clients over the eight-month data-collection period. Altogether, 380 questionnaires were collected in this study, which falls within the acceptable limits of Krejcie and Morgan's (1970) sample-size table. They contend that within a population of 2600, a sample size of 335 (with a margin of error of 0.05) should be obtained. The total number of on-tour questionnaires collected in this study also falls within the acceptable limits of Dillman, Smyth, and Christian's (2009) sample-size table. They state that for a population size of 4000, a sample size of 351 must be obtained (with a margin of error of 0.05).

The sample for the follow-up questionnaire was taken from the population of on-tour respondents who had provided an email address. Each of these respondents was sent a link to the follow-up questionnaire and from the 257 emails that were successfully sent, 128 usable follow-up questionnaires were collected. Dillman et al. (2009) contend that for a population of about 257 a sample size of 152 is required, and so the sample size for this study was slightly smaller than that recommended. Even so, the 128 questionnaires proved to be effective. Because the follow-up phase enabled the exact same sample to be compared twice, it increased the overall integrity of the study, despite the lower numbers.

#### **4.5 On-tour questionnaire design**

Developing a questionnaire requires careful attention to detail (Bruce & Chambers, 2002). Each question in the on-tour questionnaire (see Appendix A) was carefully designed to achieve maximum clarity and accuracy, especially regarding questionnaire administration, data entry and data analysis. The on-tour questionnaire can be described as a self-completion paper-and-pen questionnaire with a combination of closed questions, including yes/no questions, Likert-type scales and other multiple-choice and open-ended questions. The questionnaire was intended to be a mixed methods tool and it was designed this way to increase the richness of the data collected. As Downward and Mearman (2004) argue, an eclectic approach to combining research methods will help to capture the many different features inherent within hospitality and tourism.

The closed yes/no, scaled and multiple-choice questions are advantageous because they are easy and fast to answer, provide consistency and help generate precise answers (Fink, 2009; Malhotra, 2006; Statistics Canada, 2009). Tabulating and analysing these types of questions is straightforward and researcher bias is reduced because closed questions work well in self-administered conditions (Malhotra, 2006). Disadvantages to creating these types of questions are that they are very restricting, there is a loss of control on the part of the respondents to answer however they choose, and they require a great deal of preparation and knowledge on the part of the researcher (Oppenheim, 1992; Statistics Canada, 2009).

Although closed questions have their limitations, they proved practical for the current study. To combat the limitations of closed questions, open-ended ones were provided throughout the questionnaire to enable respondents to express any additional thoughts, questions or concerns (Statistics Canada, 2009). Open-ended questions are less

restrictive on possible answers and offer more insight into individuals, such as their beliefs, motivations and attitudes (Clark et al., 1998; Fink, 2009; Malhotra, 2006; Statistics Canada, 2009). However, open-ended questions have their own limitations: for example, they take longer for respondents to answer and are more time-consuming for the researcher to code and analyse (Fink, 2009; Malhotra, 2006; Statistics Canada, 2009).

A variety of methods have been employed over the years for the assessment of attitudes: for example, observation, question lists, incomplete sentences, story-telling, content analysis and attitude scales (Narli, 2010). The most prominent and widespread of these methods has been the use of attitude scales, such as the Bogardus, Thurstone, and Likert-type scales. Among these attitude scales, the most widely used, especially in the field of social sciences, is the Likert-type (Lozano, Garcia-Cueto, & Muniz, 2008; Narli, 2010). The reason for the widespread use of Likert-type attitude scales is because they are easy to develop and administer (Narli, 2010).

Likert-type scale attitude questions ask a respondent to indicate levels of agreement, importance, satisfaction and so forth, with a declarative statement such as strongly agree to strongly disagree (Netemeyer, Bearden, & Sharma, 2003). During the design phase of the questionnaire, it was decided that Likert-type scale questions would be an effective way of measuring a variety of respondents' attitudes and opinions. For example, questions were asked to obtain respondents' thoughts about their satisfaction levels with the dive trip and the educational information provided, their attitudes towards sharks, and the likelihood of their taking future actions.

Deciding on the optimal number of response alternatives for the scales used in the on-tour questionnaire was not a straightforward task. Making the decision even more difficult is the fact that there is no definitive agreement on the optimal number of response categories for Likert-type scales (Cox, 1980; Lozano et al., 2008). Lozano et al. (2008) contend that some researchers have suggested that when the number of choices in a scaled question increases, the reliability and the factorial validity of the scale are better. They also state that other researchers maintain that although reliability tends to increase as the number of choices grows, when the number of alternatives exceeds five or six, reliability hardly increases further.

There is ambiguity surrounding the choice of whether to include or exclude a middle response option when constructing scales (Kulas, Stachowski, & Haynes, 2008). Some researchers see no value in having a middle point (e.g. the 'neutral' or 'neither' category); they feel respondents may elect to use it because of ambivalence or indifference or because they do not feel competent or informed enough to take a stance (Kulas et al., 2008). Other authors (e.g. Kulas et al., 2008; Oppenheim, 1992) recommend the use of a middle response category because in certain situations a 'don't know' or 'unsure' response makes good sense and can be very important.

After consulting the literature and pre-testing the questionnaire, it was decided that given the nature of the scaled questions in the current study, in particular the many questions where respondents may legitimately be unsure of their response, having a five-point scale with a middle (i.e. a neutral or unsure) response option was appropriate. This particular format was kept consistent throughout both the on-tour and follow-up questionnaires.

## 4.6 On-tour questionnaire structure

Several questions within Section One were developed with the assistance of John Dobson, from the University of Wales Institute, Cardiff, who has conducted a number of studies in the area of shark tourism (see Dobson et al., 2005; Dobson, 2006, 2007, 2008; Cains & Dobson, 2008). Question 13, within Section One, was designed by taking into account Kellert's (1985) Typologies. Kellert (1985) devised nine typologies of basic attitudes towards animals in order to describe fundamental values and meanings individuals attach to the nonhuman world (see Table 4.1), and these were useful in designing question 13 to ascertain respondents' attitudes towards sharks.

Table 4.1: Kellert's Typologies

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The goal of Section One was to gain insight into the individuals participating in shark diving and subsequently achieve the first aim and first research question of this study. When designing the questions in Section One, in addition to the guidance provided by John Dobson, the research conducted by Broad and Weiler (1998) was taken into consideration. They claim that more work is required in the area of better understanding the tourist, particularly regarding visitor variables such as motivations, expectations, attitudes, previous knowledge and experience. To address these variables, respondents were asked the number of other times they participated in wildlife tourism activities, with whom they were travelling, whether or not they belonged to a dive club, whether diving with sharks was the main purpose of their trip, words they would use to describe sharks, reason for choosing Fiji as a place to go shark diving, satisfaction with the shark dive, motivating factors contributing to choosing this activity, perceptions of a shark diver's uniqueness and characteristics, and finally attitudes towards sharks.

Section Two examined the concepts of education and interpretation. *O1* and *O2* did not have a formal interpretation programme and they did not focus a lot of attention on educational efforts, although they did have information available on-site, such as brochures, posters and shark identification booklets. Moreover, their pre-dive briefings centred specifically on diver safety. *O3* claimed that they paid close attention to educational efforts, providing their clients with shark and marine related information through briefings, lectures and other media, such as brochures and videos. The intention of this study, however, was not to evaluate the operator's educational programme per se but rather the goal was mainly to investigate what is being done in the area of education and interpretation by having respondents' thoughts and feelings shed light on it, and in so doing also further the research done in this area (Moscardo, 1998a, 1998b, 2007; Orams, 1996a, 1996b).

The objective of Section Two was to help achieve the study's second aim and answer research questions two and three. As Orams (1996b) discusses in his Interpretation Model, it is important for operators to ascertain feedback from tourists regarding aspects of educational efforts. With his study in mind, questions in Section Two were designed, which centre on the theme of education and interpretation, in order to obtain feedback from shark divers. Respondents were asked the importance of various factors (including education and learning) on a shark diving trip, their satisfaction levels with and the effectiveness of the dive operators' delivery of educational information, and what dive operators could do to increase the effectiveness of the delivery of educational information.

Orams (1996b) argues that the main goal of an interpretation programme should be to prompt behaviour change, and thus respondents were asked whether anything learned on the shark diving trip would influence a change in their behaviour once back home. They were also asked what they would be willing to do for the sake of environmental and shark conservation and the likelihood of performing certain future actions. Learning is an important aspect of wildlife tourism and Stein et al. (2003) argue that there is a need to further evaluate tourists' desire to learn. With their study in mind, therefore, respondents were asked specific questions regarding how important learning was to them, if they had learned anything on their shark diving trip and whether anything learned would influence a change in their behaviour.

Section Three was an opportunity for respondents to provide additional open-ended information. The intention of the two questions was to learn what respondents felt were their most valuable gains from the whole shark diving experience and their insight into what factors could benefit the dive operator and the study.

Since the Theory of Mindfulness is a component of this study's second aim and because the research is set within the marine wildlife tourism setting, when designing specific questions within Sections One, Two, and Three, work done by Woods and Moscardo (2003) was also taken into consideration. In their study, they developed a model, based on the concept of mindfulness, which they argue can be used to understand visitor responses to wildlife tourism. Their model explores important aspects within wildlife tourism settings including features of the tourist, the experience, interpretation and the animal. With their study in mind, questions were designed in order to better understand shark diver responses. Specific questions, linked to the work done by Woods and Moscardo (2003) included respondents being asked to list three words that came to mind when thinking about a shark, whether or not they had been shark diving before, motivating factors in choosing the activity of shark diving, what operators could do to make the delivery of educational information as effective as possible, anything learned on the trip, most valuable aspects of the trip and suggestions to benefit the operator.

Section Four asked respondents a variety of demographic questions including gender, age, education level, annual income, country of residence, and occupational status. The main purpose of this section was to obtain respondents' demographic characteristics and in so doing address the first aim and research question. Questions relating to demographic information can sometimes be perceived as threatening or intimidating to respondents and therefore they are sometimes clustered together in a single section at the conclusion of a questionnaire (Alreck & Settle, 2004). Although the demographic questions in the on-tour questionnaire appeared to be of limited threat to anyone, it was decided to place this section at the end. The reason for this decision was strictly precautionary because as Alreck and Settle (2004) argue, by placing the demographic section at the end of the questionnaire, people may be less likely to refuse or terminate

the process. Great care was taken in the design of this section to minimise any perceived threat and/or intimidation to respondents and in so doing yield the best possible response rate.

The first question of Section Four (Question 25) asked respondents to state their gender. Question 26 asked them to indicate age categories, and because the study took place in Fiji, it was decided to use the same age categories as used in a census conducted in 2008 by the Fiji Island Bureau of Statistics (Fiji Islands Bureau of Statistics, 2008). For question 27, highest level of education completed, categories outlined by Peterson (2000) suited this questionnaire. Question 28 asked about individual annual income and because this can be highly sensitive for some, it was decided to incorporate the income earning results from Thapa et al.'s (2005) study and devise a new set of categories, with a larger and less intimidating income range. Question 29 looked at a respondent's country of residence. This question was designed with the assistance of arrivals statistics from the Fiji Islands Bureau of Statistics — Tourism and Migration (2010a). Finally, question 30 asked about occupational status. The categories chosen were taken directly from Alreck and Settle (2004) as they fit adequately with this study.

No matter how carefully designed a data-collection instrument is, there is always the possibility of error (Babbie, 2010). Pre-testing is therefore an essential step in preparing any survey tool (Schutt, 2009), such as a questionnaire, in order to determine its effectiveness and to protect against errors (Babbie, 2010; Colorado State University, 2010b). A pre-test is a method of evaluating survey questions and procedures by testing them out on a small sample of individuals and then reviewing responses to the questions and reactions to survey procedures (Schutt, 2009); it is not usually essential that the pre-test subjects comprise a representative sample of the larger study (Babbie, 2010).

Testing a questionnaire helps to discover important aspects such as poor wording or ordering of questions, errors in the questionnaire layout and instructions, problems caused by the respondents' inability or unwillingness to answer certain questions, and preliminary indications of length and any refusal problems (Statistics Canada, 2009).

Pilot testing is an essential exploratory phase which aims to identify and eliminate problems before a full survey is carried out (Altinay & Paraskevas, 2008; Nykiel, 2007). Fink (2009, p. 6) states that, "all surveys must be pilot tested before being put into practice." Although a pilot test is similar to a pre-test, in that it tests for aspects such as clarity of questions and how long it takes recipients to complete them (Bell, 1999; Fink, 2009), a slight difference between the two is that a pilot test is most effectively administered to a group similar to the one that will form the population of the main study (Altinay & Paraskevas, 2008; Bell, 1999; Fink, 2009). Pilot testing is like a mini study within a study, which helps the survey run smoothly (Fink, 2009).

After defining goals and aims and formulating the research questions, a draft of the on-tour questionnaire was designed. During this design phase, the questionnaire was rigorously scrutinised by the researcher and his supervisors and then pre-tested on a small sample over a period of three weeks at the end of November and beginning of December 2007. The individuals sampled, mainly within NZTRI as well as among a few other colleagues within AUT and John Dobson at the University of Wales Institute, Cardiff, were asked to provide as much feedback as possible on how to maximise the effectiveness of this survey tool. The feedback given was mainly suggestions for minor grammatical changes and ways of making the questions more precise and concise. There were no major issues raised, especially regarding question structure and/or the

Likert-type scales chosen. Those recommended changes that were deemed valuable by the researcher were made and the final version of the questionnaire was developed.

Originally it was intended to pilot test the questionnaire at all three dive operations chosen for this study. Logistical constraints made it difficult to do so with *O3* because they run a 'live aboard' operation out of Lautoka and during the intended piloting phase they were out at sea with no one available to receive copies of the questionnaire. Another issue, at the time when piloting was set to proceed, was that *O2* had still not replied to the initial request for permission to conduct research on their premises and thus had to be excluded from this phase. On 18 February 2008, *O1* was contacted and the operator gave permission to proceed with the pilot test; a copy of the on-tour questionnaire was then sent to the operator via email. *O1* kindly offered to print and distribute the questionnaires and once the researcher arrived in Pacific Harbour, he reviewed and scrutinised the copies. The pilot-study phase lasted from 29 February to 8 April 2008 and 32 questionnaires were collected. Upon reviewing and scrutinising the piloted questionnaires, it was evident that there were no problems with any of them and it was decided that this questionnaire could be used for the full study without any further amendments. These pilot-study questionnaires were also included in the final results.

#### **4.7 Administration of the on-tour questionnaire**

Prior to administering any questionnaires, including the pilot study, operators were assured that the research would have minimal negative impacts on clients and staff as well as on the daily operation of their business. The overall administration of the on-tour questionnaire was a collaborative effort handled by both the researcher and the dive operators. After the completion of the pilot study, the researcher arrived in Fiji to

distribute questionnaires at both *O1* and *O2*. *O1* and *O2* run their dives in a comparable fashion, and the administration was done in a similar way for both operations. All on-tour questionnaires were administered to willing participants immediately after they had returned from their shark dive.

The questionnaires were distributed by the researcher during a six-week period from 9 April to 19 May 2008. Prior to boarding the boat to go to the dive site, guests were briefed about the questionnaire and were asked to fill one out upon their return to the dive shop, after having had a chance to shower and change. At this stage, the researcher provided each participant with a questionnaire, a pen and an opportunity to read over the Participant Information Sheet (Appendix B). Questionnaires were filled out mainly in and around the dive shop (at available tables and chairs around the property) and returned directly to the researcher. There were a few who opted to fill one in at a later time and return it to the respective dive shop when done; it was then collected by the researcher. The process ran smoothly and efficiently and divers were very eager to participate in the study — only one diver declined to fill out a questionnaire. In the time that the researcher was in Pacific Harbour, 147 usable questionnaires were collected.

Questionnaires were also distributed by the dive operators from 9 April to 11 October 2008. Operators were given 300 questionnaires each upon the researcher's arrival in Pacific Harbour. Prior to signing their pre-dive waiver forms, guests were asked at each dive shop if they would fill out a questionnaire upon their return. The crew were encouraged to remind divers about the questionnaires just before leaving the boat to go back to the dive shop. As divers returned to the office to get their dive logbooks stamped, willing participants were given a questionnaire and a pen. A Participant Information Sheet was also left beside the questionnaires. Information for both

questionnaires (on-tour and follow-up) was included in the one Participant Information Sheet. Respondents filled out the questionnaire in and around the property and returned them to the operator. Upon completion of this phase of the study, all questionnaires were returned, via post, to the researcher in Auckland. The two operators collected 208 usable questionnaires, giving a total of 355 questionnaires collected at the two dive sites by both the operators and the researcher.

During the entire data-collection phase, the researcher was unable to be present at *O3*'s dive site and the administering of questionnaires there was done entirely by the operator. The initial 100 questionnaires were mailed to *O3* by the researcher, from Auckland. An additional 150 were given to *O3* upon the researcher's arrival in Pacific Harbour, since that is where its main office is situated. Divers were briefed about the questionnaire before their shark dive and once they had completed that portion of their trip they were asked to fill out a questionnaire. Willing participants were given a questionnaire, a pen and provided with the Participant Information Sheet. *O3* collected 25 usable questionnaires, which were all mailed back to the researcher in Auckland. The main reasons for such a low count was due to the small numbers of divers per trip (and each trip lasted 7 or 10 days), the fact that the shark dive comprised only a small part of the overall operation and was not conducted on every trip, and not everyone on board participated each time it was conducted.

In total, the operators and the researcher collected 409 on-tour questionnaires during the administration phase. Of these, 29 were deemed unusable due to either incompleteness (15) or the respondents being underage (14). The questionnaires returned incomplete did not contain enough information for them to be useful and were discarded, and when

respondents had indicated they were less than 20 years old, their questionnaires were also discarded. This left 380 on-tour questionnaires for analysis, a 'useable' rate of 93%

Although great care was taken in the design of the on-tour questionnaire, and rigorous pre- and pilot tests performed, weaknesses were still encountered. During the pilot test, no questionnaires had been collected with incomplete sections, nor had there been any mention of it being too long. However, fifteen questionnaires were returned unusable due to incomplete sections, with two respondents writing 'too long' directly on their forms. This suggests the length of the questionnaire might have prevented its completion.

Another minor issue which was noticed during data analysis was the high response rate of 'unsure', specifically to two statements within question 13. This may have been due to the wording of those particular questions. For example, one question asked participants if they thought shark teeth make good souvenirs. Had this been worded in a way to indicate that no sharks would be harmed in the process of collecting the teeth, responses may have differed. The other question asked respondents if they thought keeping sharks in an aquarium was cruel. Had this question mentioned aspects of keeping sharks in an aquarium for research purposes or for the betterment of the species, answers may have also differed. Despite these minor issues, the on-tour questionnaire was deemed effective and yielded a great deal of rich data.

#### **4.8 Follow-up questionnaire design**

The World Wide Web is increasingly being used as a tool for survey research (Van Selm & Jankowski, 2006). Van Selm and Jankowski (2006) argue that there are many reasons why researchers may choose to employ this method but one of the main ones

for this study is due to its potential reach. The ease with which potential candidates, distributed across a wide geographic region, can be reached made the Internet an ideal tool for this study. To better understand the on-tour respondents' post-tour attitudes, perceptions and behaviours, a follow-up self-completion on-line web-based questionnaire was designed and integrated into the NZTRI website, and willing respondents were sent a link to the survey via email three months following their shark diving experience. Email addresses were obtained by respondents entering them on a space provided on page four of the on-tour questionnaire. The sample for the follow-up survey was thus taken from the population generated by useable on-tour questionnaires.

The majority of questions in the follow-up questionnaire were taken directly from the on-tour questionnaire. The relationship between the two questionnaires can be seen in Table 4.2. The questions in the follow-up questionnaire emphasised the post-tour period, and were posed in a manner to extract information based on the past shark diving experience. Questions such as all of those in the demographic section, belonging to a dive club, travel party, and the number of other times participating in a wildlife tourism activity, were omitted from the follow-up questionnaire because they had already been answered in the on-tour questionnaire. Other questions were added, such as whether the respondent had participated in more shark dives, intentions on taking more in the future, including returning to Pacific Harbour, and motivational factors for future shark diving trips.

The follow-up questionnaire included yes/no questions, Likert-type scales and other multiple-choice, as well as open-ended questions. Open-ended opportunities were also given for elaboration on some of the closed questions. The types of questions in the

follow-up questionnaire are the same as those in the on-tour questionnaire, and the justifications for choosing them similar.

Table 4.2: The relationship between the questions in the follow-up and on-tour questionnaires

Follow-up question	Theme	Relates to on-tour question(s)
<b>Section One</b>		
1	impact of the shark diving experience	n/a
2	indicated actions taken	22
<b>Section Two</b>		
3	words to describe sharks	5
4	anything remembered being told on trip	n/a
5	uniqueness of individuals who dive with sharks	11
6	words to describe someone who dives with sharks	12
7	attitudes towards sharks	13
<b>Section Three</b>		
8	importance of education/interpretation on a shark diving trip	n/a
9	effectiveness of operators	16, 17
10	recommendations for education/interpretation programmes	15
11	importance of learning	18
<b>Section Four</b>		
12	feelings about the experience	8, 23
13, 14	shark diving trips taken or planned for near future	1, 4, 6
15	return to Pacific Harbour or O3	4, 7
16, 17	motivational factors	9, 10
18	ranking experiences	8
19	what you would be willing to do for conservation	21
<b>Section Five</b>		
20	most valuable thing gained from the experience	23
21	recommendations/suggestions for the operator	24
22	areas in shark tourism that need further research	n/a

The actual content of the follow-up questionnaire was intentionally kept similar to that of the on-tour questionnaire to keep consistency throughout both surveying phases; similar content was also necessary in order to perform a variety of relevant analyses and to extract valuable information (See Appendix C for the follow-up questionnaire).

#### **4.9 Follow-up questionnaire structure**

Section One of the follow-up questionnaire was comprised of two questions and its aim was to determine the shark dive's influence on respondents; both questions in this section related directly back to the content of the on-tour questionnaire. (For the relationship between the questions in the on-tour and follow-up questionnaires for all five sections, see Table 4.2). Section Two of the follow-up questionnaire was comprised of five questions that investigated respondents' perceptions and attitudes towards sharks and shark tourists; this section was taken from a combination of questions from the on-tour questionnaire. Section Three was comprised of four questions, which were taken directly from Section Two of the on-tour questionnaire; these four questions dealt with the importance and effectiveness of education and interpretation on the shark diving trip. Section Four was comprised of eight questions and dealt primarily with respondents' experiences, motivations and intentions; this section was designed from a combination of questions taken from the on-tour questionnaire. Section Five of the follow-up questionnaire, like Section Three of the on-tour questionnaire, provided respondents with an opportunity to give additional information and comments in an open-ended format.

Like the on-tour questionnaire, the follow-up questionnaire underwent rigorous editing and pre-testing. Paper copies of the follow-up questionnaire were given to the participants who had pre-tested the on-tour questionnaire, and they were asked to fill out

the questionnaire and provide feedback. This pre-test phase was carried out at the same time as the pre-test of the on-tour questionnaires. After implementing recommended changes, that were similar to those given for the on-tour questionnaire, a final version was drafted and ready to be put on-line. On 25 June 2008, the questionnaire went live and was tested to make sure it was working properly. The following day an on-line link to the follow-up questionnaire was emailed to five colleagues within NZTRI to get further input and feedback, this time regarding mainly technical aspects. No further changes were recommended and because the follow-up on-line questionnaire functioned properly it was deemed ready to be sent to actual participants of the study.

#### **4.10 Administration of the follow-up questionnaire**

The administration of the follow-up questionnaire was a straightforward process involving solely the researcher and participants. Respondents of the on-tour questionnaire had been asked to provide an email address and those willing to participate were sent a link to the follow-up questionnaire. Participants were assured that their email addresses would be used only for the purpose of sending the link to the questionnaire. They were also assured that their responses would be kept confidential.

The administration of the follow-up questionnaires ran from 1 July 2008 to 7 February 2009. An invitation email, with information about and a link to the follow-up questionnaire, was first sent out to each respondent who had provided an email address. Invitation emails were sent approximately three months following the completion of the on-tour questionnaire. The main justification for choosing three months as the time to send the follow-up questionnaire was because other previous studies had used a similar timeframe (see Ballantyne et al., 2011; Munro et al., 2008; Orams, 1997) and thus it was

deemed suitable for this study as well, given the pressures on the researcher's time and his limited financial budget.

Respondents were asked to click on the link and the start page of the questionnaire would open in their web browser. Once the questionnaire was filled out, data were sent directly into an Excel spreadsheet. A follow-up reminder was sent to each non-responding participant ten days after the initial invitation email. As Couper (2008) states, follow-up email reminders to non-respondents are effective, cheap and easy to do, and one or at most two reminders are sufficient, as was the case in this study.

The last reminder emails were sent in late January 2009 when a final invitation was sent to all participants. The survey officially closed on 27 February 2009. By the end of this phase, 257 follow-up questionnaires had been successfully sent to potential participants. Although 380 on-tour questionnaires had been collected, not all had email addresses that could be used for the follow-up questionnaire: 98 respondents had not provided email addresses, and 25 had provided them but they were either illegible or perhaps non-existent, and thus bounced back. The final tally of usable follow-up questionnaires was 128 (out of the 257 successfully sent emails), an overall response rate of 50%.

The response rate for the follow-up questionnaire was high considering that a general downside to conducting on-line surveys is they seldom achieve good response rates (Bennett & Nair, 2010; Nair & Adams, 2009; Shih & Fan, 2008; Van Selin & Jankowski, 2006). Shih and Fan (2008) analysed studies conducted in a twelve-year period and compared the response rates between the mail and web-based surveys; they found that web-based surveys generally have lower response rates than traditional mail surveys. Aitken, Power, and Dwyer (2008) conducted an on-line survey of all medical

practitioners registered as pharmacotherapy researchers in Queensland and Victoria, Australia, in a study investigating non-viral injection injuries and diseases among drug users. They sent 609 invitations to these medical practitioners and received a response rate of just 8.7%. Receiving such a poor response rate prompted Aitken et al. (2008) to urge researchers to continue to use paper questionnaires since on-line surveys are not yet an effective method of collecting data, at least from Australian medical practitioners. Given the excellent response rate achieved for the on-line questionnaires in the current study, it can be concluded that the method used in the follow-up phase was successful and effective.

Although great care was taken in designing and implementing the follow-up questionnaire, minor issues did emerge. One issue was the legibility of email addresses. Respondents handwrote their addresses, making some difficult to read and leading to bounce backs. A potential way to remedy this problem is to have respondents input their email addresses into some sort of electronic device such as a hand-held computer, this way eliminating the issue of legibility and possibly increasing response rates. An individual providing a wrong or non-existent email was another closely related issue. This problem may be virtually impossible to remedy, but its occurrence does decrease response rates. Building greater trust and respect with respondents may be a way of helping to reduce the likelihood of them providing false email addresses.

Another potential issue in this phase of the study was that although questionnaires were sent directly to the email addresses provided by the respondents themselves, it was impossible to determine who actually filled out the questionnaires. For example, a sent questionnaire could have been filled out by someone other than the addressee (e.g. a partner, a friend or a relative).

Finally, a potential issue was catching people during busy periods in their daily lives. On their diving trip the respondents had more time, were probably more relaxed and were a captive audience. In contrast, the follow-up questionnaire arrived after the respondents had returned to their everyday lives. Although there may have been an intention on the part of respondents to fill out a follow-up questionnaire, a limited amount of time may have prevented some from doing so. Despite these minor issues, the follow-up phase was a significant contribution to the study.

Along with the questionnaires, four interviews were conducted between the researcher and dive operators, namely the manager or supervisor of each of the businesses selected for the study, and with *O2*'s boat skipper. Each interview was semi-structured and lasted about an hour to an hour and a half. The interviewees were given a Participant Information Sheet (Appendix D) explaining the study, and a Consent Form (Appendix E) which they signed and dated.

The dive operators were asked guided questions in order to get their opinions on a variety of issues ranging from their perspectives on sharks and the importance of on-site education and interpretation to management issues they may be facing and their willingness to collaborate with various local stakeholders (see Appendix F for interview schedules). Due to the small number of interviews conducted, however, less emphasis has been placed on these results. Interview information was therefore used in a smaller capacity as supporting information, where relevant, to data from the questionnaires.

#### **4.11 Ethical considerations**

The current study required that certain ethical considerations be considered. At AUT ethics are overseen by AUTECH (Auckland University of Technology Ethics Committee, 2009). Participants in this study were reassured that the researcher would do his utmost

to respect their rights of privacy and confidentiality by being truthful and minimising any risk to them.

The ethics process for this study consisted of submitting an application form (to AUTECH) along with supporting documents. The supporting documents were the on-tour and follow-up questionnaires, interview schedules, participant information sheets (explaining the study to both questionnaire and interview participants), and consent forms for interviewees to read and sign. Respondents gave their voluntary consent to participate in the study by filling out a questionnaire (for dive tourists) or by signing a consent form (for interviewees). They were all reassured that at any point they did not wish to participate any longer, they could withdraw themselves from the research. The ethics application was approved by AUTECH on 3 December 2007 (Reference Number: 07/225).

#### **4.12 Observations, conversations and records taken on-site**

Observations and conversations (with divers and operators), whether intentional or not, were an inevitable part of the data-collection phase in this study. However, they did not constitute formal methodological tools of this research and they only comprised minor roles in the study. The reason being, it was advised by AUTECH that obtaining consent from participants for data collecting tools such as observations is a difficult task and thus best avoided. The researcher decided to heed the advice of AUTECH and did not use observations and conversations as formal methodological tools. Moreover, since the researcher was not able to be present on every dive at every dive site, observational and conversational data could not be deemed highly reliable and conclusive on its own. On-site field notes and mental records were nonetheless taken and the researcher did engage in conversations with divers, but only when he was approached. These notes were then

entered into a Word document, once the researcher returned from Fiji, and used to support findings from the questionnaires, wherever possible.

#### **4.13 Data processing and analysis**

Data processing and analysis was considered during the development of the questionnaire. For the on-tour questionnaire, a combination of closed and open-ended questions was designed. The intention was to extract as much valuable information as possible, quantitatively and qualitatively, in order to answer the research questions and achieve the study's aims. Questionnaires were coded into SPSS 15.0 (Statistical Product and Service Solutions) by the researcher throughout the course of the on-tour collection phase, each day during his time in Pacific Harbour and upon receiving them by mail from the operators after he had returned from Fiji. SPSS is an integrated system of computer programs designed for the analysis of data in the social sciences and is one of the most popular statistical packages used for statistical analysis (Ho, 2006). Follow-up surveys were first automatically coded into Excel, immediately upon respondents submitting them, and then inputted into an SPSS spreadsheet in March 2009.

Because of the low number of interviews conducted, the data collected from them were analysed mainly for relevant quotations to lend support to or give further insight into responses provided by survey respondents. Excel was used primarily to analyse the open-ended qualitative questions, within both questionnaires, while SPSS was used to analyse the closed quantitative questions. Where possible, the qualitative responses were combined into themes and these themes quantified to get counts and percentages. Other qualitative responses, for example, from the questions asking 'any additional comments' or 'list areas needing further research', were used to support quantitative responses by providing meaningful quotations and richness to the overall data. For the

quantitative questions, in both surveys, the types of analyses performed were descriptive statistics (frequencies and means) as well as more complex analyses through comparing means (one-way analysis of variance (ANOVA) and paired-samples *t*-tests). One-way ANOVAs are used when a researcher is interested in whether the means from several independent groups differ (Ho, 2006), while paired-samples *t*-tests are used when two groups of values a researcher wants to compare are connected or related to each other in some way (Rubin, 2010).

The most common use of the paired-samples *t*-test is to assess changes that take place between two points in time within one group (Rubin, 2010). The current study tested certain variables during the shark-diving trip and the same ones approximately three months later. The unique methodological contribution of this study lies within this two-phase comparative design. The answers given by one individual to the on-tour questionnaire were compared with the answers given by that exact same individual to the follow-up questionnaire. Both datasets (from the on-tour and follow-up questionnaires) were grouped into one main SPSS spreadsheet, making the paired-samples *t*-test the most suitable measure for a number of the questions. Paired-samples *t*-tests were used primarily in comparing on-tour and post-tour attitudes towards sharks, operator effectiveness at providing educational information, and importance of learning on a shark diving trip. These questions were designed intentionally in this manner so that the impact of the shark diving experience on the respondents could be measured.

#### **4.14 Summary**

This chapter dealt with the methodological aspects of the study. Insight was given into the operators chosen, the design of the on-tour and follow-up questionnaires, the interviews conducted, explanations of the observational and conversational data

collected, and the ethical considerations required. A section on sampling was included, and the final section discussed data processing and introduced the analyses used. These analyses, along with the findings, are described more fully in the next three chapters.

### 5.1 Introduction

Obtaining a clearer picture of participants is an important aspect of many research projects that focus on wildlife and scuba-dive tourism (Amante-Helweg, Vaughan, & Barlow, 1998; Dicken & Hosking, 2009; Stolk et al., 2007, 2005; Finkler & Higham, 2004; Orams, 2000). Having an understanding of the perceptions, motivations and attitudes of wildlife tourism and scuba diving participants can be useful for researchers and policy-makers as well as for operators attempting to enhance their clients' experiences and to manage on-tour and post-tour behaviours (Stolk et al., 2007). Moscardo (2007) argues that little research exists which examines the profiles of different types of wildlife watchers. One of the main goals of this study is to provide further insights into various demographic and psychographic characteristics of the individuals participating in shark diving in Beqa Lagoon and with *O3*.

This chapter presents results taken exclusively from the on-tour questionnaire that was administered immediately following the shark diving experience. The results are based on a variety of univariate, one-way ANOVAs and open-ended analyses, which have been performed to help answer the study's first aim and first research question. Findings in this chapter, as well as in chapters six and seven, are presented and discussed simultaneously, and compared, wherever possible, to studies conducted in relevant areas. This technique follows Dobson's (2007) study in which he also explored aspects of the shark diving experience and was chosen because it is an effective way of letting the data tell a story. The chapter concludes by discussing the fact that it is difficult to try

and create a definition of a shark tourist and discusses the possibility of classifying the study's respondents.

## **5.2 Demographic characteristics of the respondents**

More than fifty per cent of respondents in this study were male (58.4%), while 40.3% were female and 1.3% did not indicate their gender. These results are similar to those in Barker and Roberts' (2004) scuba diving study. They are also consistent with other studies conducted in the area of scuba diving. For example, in Musa et al.'s (2011) study, they found that 60.9% of divers were male and 39.1% were female, Bennett (2002) found that 64% of divers were male and 36% were female, Musa et al. (2006) found that 53.1% of divers were male and 46.9% were female, and Musa (2002) found that 64.8% of divers were male while 35.2% were female. These gender results reflect that scuba diving in general is a sport that has been dominated by males (Musa et al., 2011; Dicken & Hosking, 2009; Meisel-Lusby & Cottrell, 2008; Mundet & Ribera, 2001; Oh, Ditton, & Stoll, 2008; PADI, 2009; Thapa et al., 2006). The larger proportion of males could be attributed to the traditional tough and often macho image that has tended to accompany the sport of scuba diving, or the physical demands of moving around in such heavy equipment (Garrod & Gössling, 2008b).

While diving is still very much a male-dominated sport, the findings in the current study show that the gender gap of diving tourists is gradually reducing (Garrod & Gössling, 2008b; Musa et al., 2006). This could be because today's certification training courses, such as PADI, allow a more relaxed and fun way to learn scuba diving (New Zealand Sea Adventures, 2010), and because scuba equipment has become much lighter and more comfortable for females, making both genders equal in the water and the sport more accessible to everyone (New Zealand Sea Adventures, 2010).

The original age categories within the on-tour questionnaire were first analysed and then combined into the three larger age categories of 20–34, 35–49, and 50 years and older. The majority of respondents (60.3%) reported being between the ages of 20–34, while 20.5% said they were between the ages of 35–49 and 17.6% indicated being 50 years or older; 1.6% did not indicate their age (see Table 5.1).

Table 5.1a: Age distribution of the respondents — from original questionnaires

<b>Age Group</b>	<b>%</b>
20–24 years	24.7
25–29 years	18.9
30–34 years	16.6
35–39 years	9.5
40–44 years	6.6
45–49 years	4.5
50–54 years	7.1
55 years or older	10.5
No age indicated	1.6
<b>Total</b>	<b>100%</b>

Table 5.1b: Age distribution of the respondents — combined age groups

<b>Combined Age Group</b>	<b>%</b>
20–34 years	60.3
35–49 years	20.5
50 years or older	17.6
No age indicated	1.6
<b>Total</b>	<b>100%</b>

These results are consistent with other studies which found many divers to be in their twenties, thirties and forties (e.g. Musa et al., 2011; Stolk et al., 2005; Ditton et al., 2002; Tschapka, 2006; Thapa et al., 2005; 2006; Bennett, 2002). Garrod and Gössling (2008a) state that many surveys of divers suggest that it is a sport dominated by those in their 30s and 40s. In the current study, almost three-quarters of participants were in their 20s and 30s, with slightly more than a quarter being 40 years or older. The reason for

the younger age distribution in this study is most likely due to the type of tourists visiting Pacific Harbour. The researcher's observations of and conversations with the divers revealed that some of the younger respondents were postponing current commitments, such as searching for and settling into a career after having recently completed their studies or resigned from a job, in order to pursue around the world travel, with Fiji being a stop on their route. As a member of the youngest group stated, their trip to Fiji was the "*End of my around the world trip, the last stop.*"

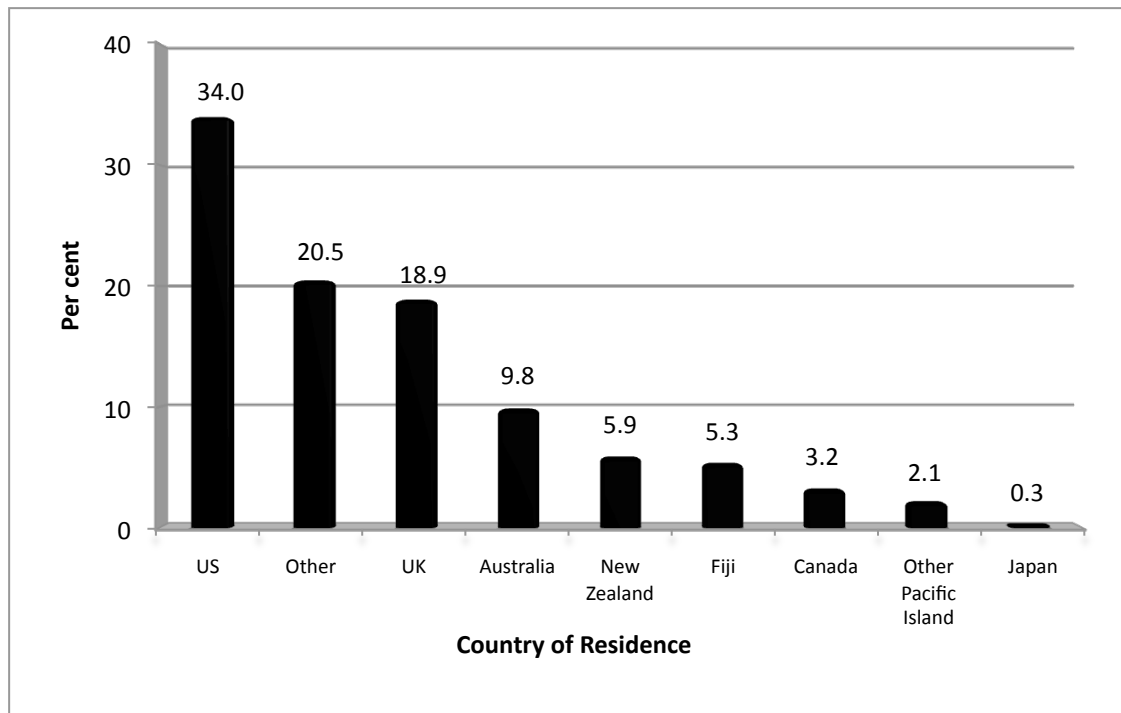
The majority of the respondents in this study usually reside in the US (34%) or the UK (18.9%). However, the 'other' category also represented a substantial proportion of the answers for this question (20.5%), with respondents coming from 24 different countries including Germany, Ireland, Denmark, Norway, Israel, Mexico and Argentina, which shows the international diversity among divers in this study. For simplicity, these countries of residence were grouped into the following geographic regions: Africa and the Middle East, Asia, Central and Southern Europe, Mexico and the Caribbean, Northern Europe and Norway and Russia, and South America (see Table 5.2). The large number of overseas visitors is also consistent with findings in other scuba diving studies (e.g. Dicken & Hosking, 2009; Musa et al., 2006; Bennett, 2002; Musa, 2002) and shows that international travel is very much a part of the way in which divers tend to access their recreational opportunities (Garrod & Gössling, 2008a). The remaining respondents indicated residing in Australia (9.8%), New Zealand (5.9%), Fiji (5.3%), Canada (3.2%) and Other Pacific Island (2.1%) and Japan (0.3%) (see Figure 5.1).

Table 5.2: Geographic regions from 75 responses to 'Other' countries of residence

Geographic Region	Country of residence	Numbers (absolute)	%
Africa and the Middle East	Israel	1	
	Saudi Arabia	1	
	United Arab Emirates	2	
	<b>Subtotal</b>	<b>4</b>	<b>5.3</b>
Asia	Hong Kong	2	
	Indonesia	1	
	Singapore	1	
	<b>Subtotal</b>	<b>4</b>	<b>5.3</b>
Central and Southern Europe	Belgium	2	
	Czech Republic	2	
	EU	1	
	France	6	
	Germany	8	
	Ireland	8	
	Italy	3	
	Netherlands	6	
	Spain	4	
	Switzerland	2	
	<b>Subtotal</b>	<b>42</b>	<b>56</b>
Mexico and the Caribbean	Mexico	2	
	US Virgin Islands	1	
	<b>Subtotal</b>	<b>3</b>	<b>4</b>
Northern Europe and Norway and Russia	Denmark	5	
	Finland	1	
	Norway	8	
	Russia	3	
	Sweden	4	
	<b>Subtotal</b>	<b>21</b>	<b>28</b>
South America	Argentina	1	
	<b>Subtotal</b>	<b>1</b>	<b>1.3</b>
<b>TOTAL</b>		<b>75*</b>	<b>100%</b>

\*the number of respondents who indicated 'other' for country of residence

Figure 5.1: Country of residence



The results for countries of residence reported in this study are slightly different to those of all visitors to Fiji during the same time period as this study's data collection. According to visitor arrival statistics collected by the Fiji Islands Bureau of Statistics (2010c) for the year 2008, visitors most frequently came from Australia (42%), New Zealand (17%), the US (11%), Pacific Islands (6%), the UK (6%), Continental Europe (5%), Japan (4%), Canada (3%), Rest of Asia (3%), Others (2%), and South Korea (1%). The higher number of US, Other (in which 84% of respondents indicated residing in Northern Europe, Russia and Norway), and UK residents in the current study could be attributed to the fact that many divers are certified and come from the US and Europe.

According to PADI (2009), 50% of all their worldwide entry-level diver certifications in 2009 were processed in their US and Europe offices. Garrod and Gössling (2008a) state that many divers reside in developed countries in the Northern Hemisphere, with more

than one-third being from Europe and many more from the US. Another reason for the difference in countries of residence results in this study compared with those of general visitors (Fiji Islands Bureau of Statistics, 2010c) could be that the types of travellers visiting Pacific Harbour and sailing with *O3* are more adventurous and willing to travel longer distances to pursue an activity such as shark diving.

Almost two-thirds of respondents (63.2%) had university qualifications, including bachelor's degrees, master's degrees, professional degrees (e.g. medicine, law, and dentistry) and doctorates. More than one-third of respondents had completed at least high school (18.2%), some university but no degree (13.2%), or some other form of education (2.9%); 2.6% of respondents did not indicate their level of education (see Table 5.3). These results indicate a high level of education among respondents and are consistent with other studies (e.g. Musa et al., 2011; Garrod & Gössling, 2008a; Oh et al., 2008; Thapa et al., 2005, 2006; Stolk et al., 2005; Musa et al., 2006; Musa, 2002) that have shown that scuba diving is a sport that tends to attract highly educated participants.

Table 5.3: Levels of education completed

<b>Level of education</b>	<b>%</b>
High school	18.2
Some university, no degree	13.2
Bachelor's degree	36.3
Master's degree	13.2
Professional degree	9.5
Doctorate degree	4.2
Other	2.9
No level of education indicated	2.6
<b>Total</b>	<b>100%</b>

Determining or estimating respondents' personal income levels was a difficult task because the individuals, originating from a variety of international destinations, are not

remunerated in the same currency. A decision was made to use the US dollar as the general currency when asking participants to estimate their yearly income. Exchange rates were given from US dollars into seven different currencies (the Australian, Canadian, Fijian, and New Zealand dollars, the Japanese Yen, the Great Britain Pound, and the Euro) and respondents were asked to calculate their estimated annual income. The following three income categories were used: less than US\$45,000; US\$45,000–US\$75,000; and more than US\$75,000. These categories were chosen according to the US Census Bureau’s 2008 report on average (median) incomes for the years 2006 and 2007, which fell somewhere between US\$45,000 and US\$50,000 (DeNavas-Walt, Proctor, & Smith, 2008).

Nearly one-quarter (23.4%) of the respondents reported earning between US\$45,000 and US\$75,000 and 30.8% reported earning more than US\$75,000. One-third of respondents reported earning less than US\$45,000 (32.9%) and 12.9% did not indicate their level of income (see Table 5.4).

Table 5.4: Annual individual income levels

<b>Level of income (US\$)</b>	<b>%</b>
Less than \$45,000	32.9
\$45,000–\$75,000	23.4
More than \$75,000	30.8
No level of income indicated	12.9
<b>Total</b>	<b>100%</b>

These results are similar to those found in other studies in which the majority of divers reported earning above-average incomes (e.g. Garrod & Gössling, 2008a; Gössling, Lindén, Helmersson, Liljenberg & Quarm, 2008; Oh et al., 2008; Thapa et al., 2006; Tschapka, 2006; Stolk et al., 2005). The fact that this study, as well as others, has shown that divers possess high levels of education and income suggests a link between

the two variables. As Garrod and Gössling (2008a) contend, the domination of scuba diving by highly educated individuals is often linked to the high cost of participating in the sport, only those with well paid jobs being able to afford the costs involved. Musa et al. (2011), in their study on divers in Malaysia, argue that they may have better incomes and thus greater access to diving opportunities which consequently contributes to enhanced experiences.

The higher non-response rate to this question could have been due to its sensitive nature. As Peterson (2000) states, asking individuals their income is usually considered the most personal of the common demographic questions and one which study participants most frequently refuse to answer. Bradburn, Sudman and Wansink (2004) contend that the refusal rate for the income question is usually high due to its intrusiveness. In addition to the intrusive nature of the income question, the high non-response rate in this study could have been due to the way the question was structured, with respondents having to convert their incomes from their own currency to US dollars. This task may have been onerous for divers and thus they chose simply to ignore the question altogether. If this was indeed the case then it shows a limitation in having asked the income question in this manner. Instead, it may have been more effective to have asked each respondent to provide their income in their own currency and then later the researcher could have converted each response into a common currency such as the US dollar.

Almost two-thirds of the respondents (63.9%) indicated being either a professional, employed in 'other' areas, or a student (see Table 5.5). Another 17.9%, however, indicated being occupied as managers/executives and engineers/technicians. Since these two occupations could also be placed within the category of 'professional' there may

have been confusion regarding this question and thus limiting its effectiveness. Instead, it may have been more effective to have asked the respondents what they do and then place them into predefined categories, to avoid any confusion. Despite the limitations to this question the results suggest that respondents' high-level positions and higher earning capacity would make participating in an activity such as shark diving more easily accessible. The occupational status results in this research are similar with those in Mundet and Ribera's (2001) study, in which they found that most divers to the Mendes Islands in Spain reported being employed in middle- to high-level professions. They found that their respondents were highly educated and argue the positive link between higher levels of education and occupation.

Table 5.5: Occupational status

<b>Occupation</b>	<b>%</b>
Professional	28.4
Other	21.3
Student	14.2
Managerial, Executive	9.2
Engineering, Technical	8.7
Marketing, Sales	7.1
Skilled craft or trade	4.7
Administrative, Clerical	2.4
Semiskilled occupation	1.1
No status indicated	2.9
<b>Total</b>	<b>100%</b>

The reason for the large number of 'other' occupations (e.g. being retired, volunteers, travellers and unemployed) and students could be attributed to the significant time required to travel to a destination such as Pacific Harbour or *O3*'s 'Liveaboard' in order to participate in shark diving. Although students may be less endowed financially, they may have planned ahead and set aside money in order to fund their travels and activities. Conversations with some respondents revealed that their current trip was one

leg on “*An around the world experience*”, which most likely was a one-time occurrence prior to settling into a career and more stable life.

Most respondents (73.6% in total) indicated travelling with partners (31.3%), friends (23.2%) and/or alone (19.1%). Some indicated travelling with a tour group (12.2%) and with family (11.7%), but very few (2.4%) indicated ‘other’ as their travel group. Respondents were able to respond to more than one category in this question and Table 5.6 shows the results for the total number of responses given for each category and the percentages of these totals. The first two results in the travel group category are similar to findings in Lück’s (2003b) marine wildlife tourism study on dolphin-watching tours in New Zealand. He found that many dolphin watchers indicated travelling with friends and partners. Musa et al. (2006) found that the majority of scuba divers (61.2%) to Layang Layang, Malaysia made the trip with a partner or with friends. Ditton et al. (2002) found in their study on sport divers in offshore Texas waters that many respondents travelled with friends (21%) and fewer (13%) with family.

Table 5.6: Travel groups

<b>Travel group</b>	<b>Count</b>	<b>%</b>
With partner	131	31.3%
With friends	97	23.2%
Alone	80	19.1%
With tour group	51	12.2%
With family	49	11.7%
Other	10	2.4%
<b>Total</b>	<b>418</b>	<b>100%</b>

Cater (2008) argues that scuba diving, in general, is closely linked to social ties and highlights that in previous studies many respondents indicated pursuing the activity with friends and/or a combination of friends and family (e.g. Ditton et al., 2002; Meisel-Lusby & Cottrell, 2008). Moscardo’s (2007) study examining visitor profiles at three

different types of wildlife-based tourism attractions in Australia and New Zealand, also showed that many tourists indicated travelling as couples, with families and with friends.

Although the current study shows that many respondents indicated being with partners and friends, a number of them also indicated being alone. Musa et al. (2006) also found that many divers in Layang Layang (16.3%) indicated travelling alone. Since one-fifth of the respondents in this study said they were on their current trip to Fiji by themselves, this could indicate that participating in the activity of shark diving itself was more appealing to them than were other reasons, including social aspects. The following three comments, to the question about the most valuable thing gained from the shark diving experience, suggest this strong personal desire to dive with sharks: *“Satisfying my urge to see sharks close up”*, *“Achieving my goal to dive with tiger sharks and bull sharks”*, and *“My own selfish personal enjoyment.”*

### **5.3 Psychographic characteristics of the respondents**

Respondents were asked whether or not diving with sharks was the main purpose of their current trip to Fiji. A large majority (84.5%) of respondents indicated that shark diving was not the main purpose for them visiting Fiji, while 15% said it was and 0.5% did not reply to this question. If they had answered no to this question, the divers were then asked to list the main purpose of their trip. The most commonly occurring reasons for their trip were they came just for a holiday, for diving in general, or to volunteer/work/study. Being that the dive sites under investigation in this study are centred on shark encounters, it is interesting that only a few of the respondents indicated that shark diving was the main purpose of their trip to Fiji. This finding was thus compared to some of the other results in the study and the interesting ones will be

discussed throughout this and the next two chapters. To begin with, a demographic overview of the results for whether shark diving was the main purpose of the trip will be presented.

Of those who said that shark diving was the main purpose of their trip to Fiji, 54% were male, and 64% were between the ages of 20–34, 20% between 35–49 and 16% were above 50. Many listed high school (33%), a bachelor's degree (23%), some university (14%) and a master's degree (12%) as their highest level of education completed. The majority of those who said shark diving was the main purpose of their trip listed the US (35%), other (23%), and the UK and Australia (11% each) as places where they resided and 50% indicated earning under US\$45,000, 18% between US\$45,000 and US\$75,000, and 32% above US\$75,000. The occupations most listed among these individuals were professional (26%), other (26%), and student (25%).

Of those who said shark diving was not the main purpose of their trip to Fiji, 60% were male, and 61% were between the ages of 20–34, 21% between 35–49 and 18% were above 50. Many listed a bachelor's degree (40%), high school (16%), some university (13%), and master's degree (14%) as their highest level of education completed. The majority of those who said shark diving was not the main purpose of their trip listed the US (34%), other (20%), and the UK (21%) as places where they resided and 36% indicated earning under US\$45,000, 28% between US\$45,000 and US\$75,000, and 36% above US\$75,000. The majority of these respondents listed professional (30%), other (21%), and student (13%) as their occupations.

These results, regarding main purpose of the trip to Fiji, are similar to findings in a study conducted by Catlin, Jones, Norman et al. (2010). They found that only 37% of

respondents visited the Ningaloo area, where the opportunity to view whale sharks is readily available, for the main purpose of viewing the sharks. The authors suggest that a reason for this is because other attractions in the area are having more success at drawing in tourists. Visitors to Fiji may be interested in a mixture of experiences and shark diving may be just one of the many opportunities available. As two respondents stated, the main purpose of their trip was a general “*Diving holiday, sharks were bonus*”, and to “*Visit Fiji, for sun, beach, and dive.*” The results suggest that shark diving at Beqa Lagoon and with *O3* may not be a main drawcard for visitors to Fiji, like it is at a destination such as the Aliwal Shoal Marine Protected Area in South Africa (Dicken & Hosking, 2009).

These results show that the population under investigation in this study are not avid shark divers seeking out the activity per se but rather casual divers who are certified and willing to take up such an opportunity if it is available. As one respondent stated, they chose shark diving “*Because we are staying here. Opportunity presented itself.*” The low count (17.4%) of respondents who indicated belonging to any scuba diving club further reinforces this notion because respondents in this study may lack the knowledge about shark diving opportunities, which they could have been otherwise receiving had they belonged to a scuba diving club. In fact, double the amount (30% as opposed to 15%) of those who said shark diving was the main purpose of their trip indicated belonging to a scuba diving club. These individuals could have been more aware of shark diving opportunities available due to their membership in diving clubs. Alternatively, many respondents may be very knowledgeable about shark diving opportunities and simply chose to travel to Fiji for reasons other than participating in the activity.

Since the majority of respondents said that shark diving was not the main purpose of their trip and many indicated travelling in social groups, this shows that overall these individuals are more, as Bryan (1977) found in his study which attempted to classify trout fishermen, generalist shark divers as opposed to specialists. The specialist, Bryan (1977) argues, is one who is on the extreme end of the recreational specialisation continuum, one who is very experienced and serious about their leisure pursuit and likely to centre their leisure time, vacation and quite possibly even their career around fishing, which for the most part, does not seem to be the case with the respondents in this study.

Respondents were asked, in an open-ended format, to explain why they chose Fiji, and in particular Beqa Lagoon or sailing with *O3*, as a place to go shark diving. The 345 responses were analysed and those that were similar were combined into themes. Nineteen themes emerged, and these were then quantified to obtain counts and percentages. The most commonly occurring themes were: excellent reputation/recommended (35.1%), offered here/on holiday anyway (24.1%), saw it advertised (8.4%), chance to see bull and tiger sharks (6.1%), and great opportunity (4.6%) (see Table 5.7). These responses show the diversity of reasons for choosing the activity of shark diving. The fact that ‘offered here/on holiday anyway’ made up a quarter of the responses suggests that many of these divers are ready and willing to participate in shark diving where and when available. As two respondents stated, “*Came to dive and shark diving was available — went an extra time — very interesting*”, and “*The opportunity could not be missed when leaflet spotted.*”

These responses assist in further explaining that for most divers, shark diving was a by-product as opposed to the main purpose of their trip to Fiji. The reasons demonstrating

this fact most clearly are: it was offered here/on holiday anyway, saw it advertised, great opportunity, and by chance. However, the most common response to this question had to do with the dive sites having an excellent reputation and being recommended, which shows that there is some awareness of these shark diving operators in Pacific Harbour. As one respondent commented, they chose shark diving because of the, “*Reputation and recommendation of the company.*”

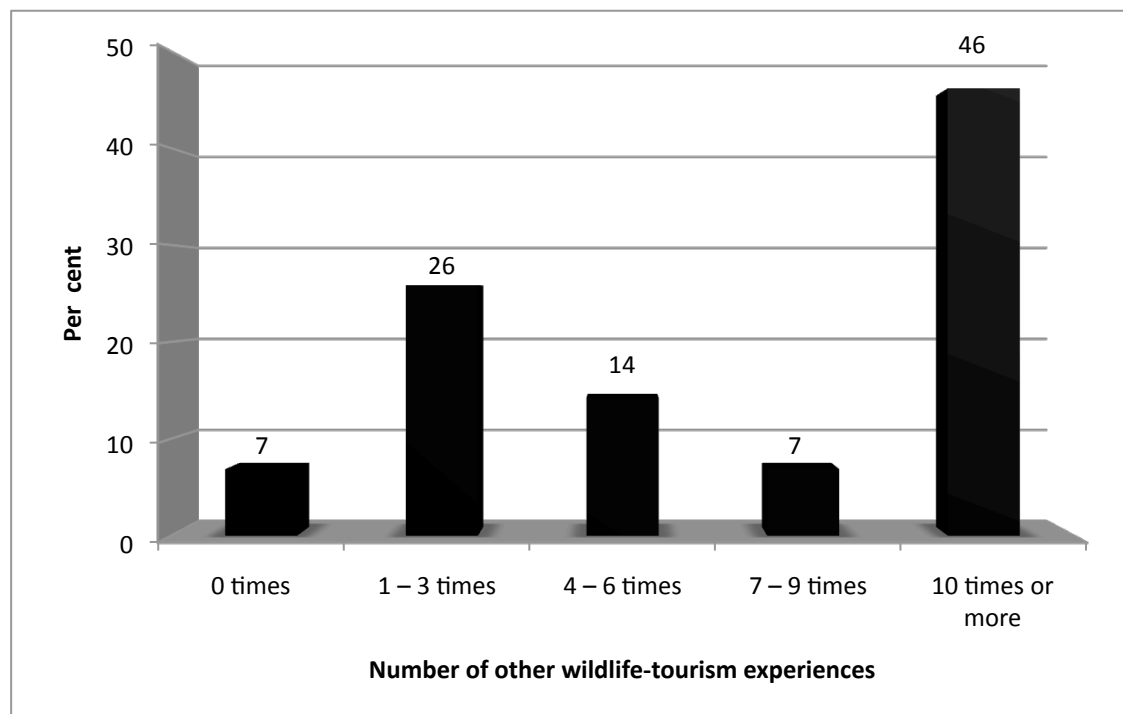
Table 5.7: Reasons for choosing to go shark diving in Fiji

<b>Reason/Theme</b>	<b>Count</b>	<b>% of Count</b>
Excellent reputation/Recommended	121	35.1
Offered here/On holiday anyway	83	24.1
Saw it advertised	29	8.4
Chance to see bull and tiger sharks	21	6.1
Great opportunity	16	4.6
By chance	13	3.8
To see sharks without a cage	12	3.5
Diversity of sharks	10	2.9
Live here	10	2.9
Good visibility	8	2.3
Broadreach program	6	1.7
Good price	5	1.4
Proximity	2	0.6
Safety	2	0.6
Marine conservation efforts	2	0.6
New destination	2	0.6
It’s icing on a beautiful cake	1	0.3
Always wanted to do it	1	0.3
Conquer fears	1	0.3
<b>Total</b>	<b>345</b>	<b>100%</b>

Respondents were asked to indicate the number of times in their lives, other than their shark diving experience in Beqa Lagoon or on O3’s ‘Liveaboard’, they had participated in wildlife tourism activities (e.g. whale watching, big game safaris, bird watching and other shark-watching trips). Only 7% of the respondents indicated never having participated in other wildlife tourism activities. The rest of those sampled indicated

being on at least one to three other wildlife tourism experiences (26%), while most (67%) indicated participating in at least four or more other wildlife tourism trips (see Figure 5.2). Of those who indicated that shark diving was the main purpose of their trip to Fiji, 56% (as opposed to 44% for those who said it was not) listed being on ten or more wildlife tourism experiences. When asked, in an open-ended question, to list the types of activities in which they participated, the most frequently occurring answers were whale and dolphin watching, bird watching, game safaris, shark watching and general scuba diving.

Figure 5.2: Other wildlife-tourism experiences



The responses from this question show that interacting with wildlife in their natural environment is an activity which ranks highly for many of these tourists. As one respondent stated, “*I love wildlife.*” Dobson (2007), in his study exploring the shark diving experience, also found that encountering sharks in their natural environment was a key aspect to the diver’s experience. The results in this study illustrate a continued

desire to pursue wildlife tourism experiences, possibly due to the psychological benefits, such as the enjoyment and appreciation of nature, that are derived from participating in such activities (Curtin, 2008; Muloin, 1998; Zeppel & Muloin, 2008c). As one respondent stated, regarding pursuing a shark diving experience, *“This is something that has intrigued me for a while and it is not something you can do everyday or everywhere in the world. It’s a once in a lifetime opportunity.”* Another explanation for these results could be simply that nature and wildlife tourism, in general, are sectors within the greater tourism industry which have become quite popular, attracting the attention of millions of tourists worldwide (Catlin, Jones, Jones et al., 2010; Curtin, 2010; Rodger et al., 2009).

Almost half of the respondents (42.6%) indicated having been shark diving before their trip to Beqa Lagoon or sailing trip with O3, while 57.1% said they had never been shark diving before and 0.3% did not respond. The fact that over half of the respondents indicated never having been shark diving before shows that for them this was a new experience, which is one of the features of the experience likely to encourage mindfulness as outlined in Woods and Moscardo’s (2003) Mindfulness Model for Wildlife Tourism. Given that shark diving entails encountering rare and unique animals, this too is a feature of the animal likely to encourage mindfulness as described in Woods and Moscardo’s (2003) model.

The results have already shown that the respondents had participated in a large number of other wildlife-tourism activities, and the high number of individuals with previous shark diving experience is consistent with this finding and reaffirms their enjoyment with and desire for these types of activities. There were 240 responses to the open-ended question to indicate destinations where they had been shark diving before. The

most frequently cited shark diving destinations were Australia (42 times), Fiji (29), Galapagos (15), Bahamas (14) and Honduras (13). A variety of other less frequently indicated places included South Africa, Mexico, Tahiti, Palau, Thailand, Belize, Papua New Guinea and California.

Respondents were asked to list words that come immediately to mind when thinking of a shark. They provided 1048 words, which were then analysed, coded and quantified. The ten most frequently cited words were: big (8.3%), teeth (6.9%), beautiful (5.3%), scary (5.2%), dangerous (5.1%), predator (4.2%), powerful (4.0%), graceful (3.7%), awesome (3.1%), and sleek (2.3%). These percentages were obtained by taking the number of times each word appeared and dividing it by the total amount of words provided. The fact that 'big' and 'dangerous' were among the words most frequently cited concur with features of the animal likely to encourage mindfulness in Woods and Moscardo's (2003) model. Moreover, that 'dangerous' was among the top words signifies a potential apprehension on the part of the shark diver and shows the risk element inherent, which is consistent with Buckley's (2010) claim that risk is an integral part of an adventure activity such as scuba diving.

The only two words, among the 'top ten', that display negative sentiments towards sharks are 'scary' and 'dangerous'. The rest of the words show that overall respondents view sharks favourably or at least in a respectful light. These results are consistent with those in Dobson's (2007) study in which he found that divers viewed sharks in a favourable manner. Respondents in his study also used words such as graceful, beautiful, agile and respect to describe sharks. Woods (2000) conducted a study in which she asked participants to list their favourite animals in Australia and found that although sharks did not rank at the bottom of the list (14th out of 30 animals listed), they

were also nowhere near the top. Her study shows that people generally have a lower affection towards sharks. This negativity or apprehension towards sharks did not come through in the findings of the current study, although this is not surprising given that the population under investigation had already shown an interest in shark diving as well as other wildlife tourism activities. The words respondents used on their questionnaires, for the most part, show an overall positive and respectful attitude towards sharks.

Respondents were asked to list up to three factors that motivated them to choose shark diving as an activity. The 879 responses (single words and phrases) were analysed and responses that were similar were combined into themes. Thirty themes emerged and these were then quantified to obtain counts and percentages. The ten most frequently occurring themes were: adventure/thrill/excitement (13.9%), like sharks/love for wildlife (11.4%), curiosity/interest (8.8%), close encounters with sharks (8.2%), uniqueness of the activity (8%), experience (7.1%), to learn more/education (5.8%), enjoy diving (4.8%), adrenaline (4.6%) and fear (4.1%). Other themes included: fun (4%), friends/family (2.8%), life opportunity (2.8%), beauty (1.6%), stories (1.6%) and photography (1.4%). The responses show that these individuals are motivated by a well-rounded experience when participating in shark diving, which Jennings (2003) argues is consistent with scuba divers in general. They are motivated by thrill and uniqueness of the activity as well as for the adrenaline rush, which is linked to the affective domain, a main component of Orams' Interpretation Model. Respondents are also curious about and appreciate sharks and wildlife. Respondents desire close encounters with sharks and want to learn about them when on a shark diving trip, which is linked to the cognitive element in Orams' (1996b) model. As one respondent stated, "*The learning experience is most important to me so I can learn more about these amazing animals.*" Dobson (2007) found that although adventure or adrenaline rush is important to shark divers,

they too are inspired by other aspects of the experience, especially seeing sharks up close in their natural environment.

Respondents were asked to list the one most important motivating factor for choosing shark diving, of the three provided in the previous question. From the 305 responses provided, the five that were most frequently given were: like sharks/love for wildlife (17.7%), uniqueness of the activity (11.5%), to learn more/education (9.2%), experience (9.2%) and close encounters with sharks (8.5%). These results suggest that the primary motivations for the respondents choosing shark diving is because of their interest in sharks and wildlife, and because they wanted to be close to and learn more about these creatures. Results in other studies have outlined the importance that scuba divers place on motivating factors such as adventure, learning and seeing a variety of marine life up close (Dimmock, 2010; Dobson, 2007; Tschapka, 2006; Musa et al., 2006; Bennett, 2002; Ditton et al., 2002; Musa, 2002). These motivating factors are also consistent with features of the experience and tourists likely to encourage mindfulness in Woods and Moscardo's (2003) model, particularly excitement and emotion and close proximity to animals. Cater (2008) argues that 'esteem' (in particular from others) is a basic social need for divers. Jennings (2003) also contends that one of the main motivators for scuba divers is the 'unique image of the sport'. Although the uniqueness of this experience may enhance a diver's esteem and so be a motivating factor, the responses in this study suggest that the divers appear to be more focused on sharks and wildlife than on esteem or 'bragging rights'.

Respondents were asked whether or not they saw themselves as unique/different to other wildlife-viewing tourists and the majority (59.5%) said yes, although more than one-third (34.2%) said no and 6.3% did not reply. The results show that many of these

individuals do view themselves differently and may suggest that shark diving in Beqa Lagoon and with *O3* is more of a niche market rather than merely another wildlife-viewing activity among many. The many respondents who view themselves as unique may do so because pursuing the activity of shark diving is one that requires specific skills and qualifications, as well as more access to resources, particularly financial (Musa et al., 2011; Garrod & Gössling, 2008a). As one respondent commented, *“It is a specialised activity with specific training needed, plus has a danger aspect which may not appeal to all.”* Another respondent stated that, *“It’s different from other wildlife tourism in that you need more ‘will’ because of the requirements.”* Although many shark divers ‘view’ themselves as different to other wildlife tourists, the results from the questionnaire suggest otherwise — for example, when asked about the main purpose of their trip, many had said they were on holiday anyway, or had seen it advertised or participated by chance.

Respondents were asked to explain their answer to the question of shark diver uniqueness (regardless of whether they had answered yes or no to the original question). The reason for asking this question and the previous one was to analyse how these individuals view themselves as shark divers. The goal behind these questions was to provide further insights into understanding the tourists, from their very own perspective. The 274 responses were analysed and responses that were similar were combined into themes. Eleven themes emerged, and these were then quantified to obtain counts and percentages. The five themes that occurred most often were: they share an appreciation for sharks/wildlife (21.1%), they are more adventurous (19.3%), they are not that different to other wildlife viewing tourists (15.3%), a lot of people do not like/are scared of sharks (12.8%), and it takes a certain type of person (8.8%). Some other explanations

included: they need to have specific qualifications (8.4%), not everyone wants to do it (5.1%) and anyone can do it (4.4%) (see Table 5.8).

Table 5.8: Explanations to uniqueness of the shark diver

<b>Explanation</b>	<b>Count</b>	<b>%</b>
Share an appreciation for sharks/wildlife	58	21.2
More adventurous	53	19.3
Not that different to other wildlife viewing tourists	42	15.3
A lot of people do not like/are scared of sharks	35	12.8
Takes a certain type of person	24	8.8
Need to have specific qualifications/More specialised activity	23	8.4
Not everyone wants to do it	14	5.1
Anyone can do it	12	4.4
Due to the perceived extra risk/danger	5	1.8
Everyone has different interests	5	1.8
Adrenaline junkie	3	1.1
<b>Total</b>	<b>274</b>	<b>100%</b>

As the results in the previous analysis show, the majority (59.5%) of respondents indicated that they viewed themselves as different to other wildlife tourists. Despite this finding, other previous results tend to suggest that many of the respondents in this study are mainly individuals able and willing to take advantage of opportunities which present themselves on a trip, such as shark diving, rather than specifically unique shark tourists. As one respondent stated, *“We’re not different, it’s just about using the opportunity when you got it.”* Respondents who did not believe they are any different to other wildlife-viewing tourists said that when it comes to diving, *“anyone can do it”*, and *“More and more people dive and it is becoming an industry like any other touristic activity.”*

Respondents were asked to list up to three words they would use to describe someone who dives with sharks. The 737 words given were coded into thirty-five categories, which were then quantified into percentages. The ten most frequently given descriptors

were: adventurous (21.4%), interested/curious (15.6%), conservationist/nature-lover (10.4%), thrill-seeker/adrenaline junkie (8.7%), exciting/fun (8%), brave/courageous (7.3%), crazy (4.9%), educated (3.4%), cool (3.3), diver (3.1). Some of these characteristics are similar to the explanations given for why shark divers are different from other tourists; for instance, those who dive with sharks are adventurous, have an appreciation for sharks and wildlife, are adrenaline junkies, and are brave/courageous. These results again speak to the fact that scuba-dive tourism is an activity for the adventurous but also for those interested in viewing wildlife (Buckley, 2010; Garrod & Gössling, 2008a; Dobson, 2007; Musa et al., 2006; Swarbrooke et al., 2003; Jennings, 2003). The following three respondents' comments are exemplars of the descriptions given for people who dive with sharks: *"We share a love and admiration for natural life — the creatures we share the world with"*, *"Because shark tourism takes more of an adventurous person"*, and *"Diving sets us apart to begin with. Interest in sharks sets us further apart."* These results also concur with features of the tourists likely to encourage mindfulness in Woods and Moscardo's (2003) model; for example, high interest in viewing wildlife, excitement and emotion, and personal connection to topic. Although the results in this section do not fully answer the question of shark diver uniqueness, nor can they provide a concise and extensive definition, they do provide greater insight into the way these individuals view themselves as shark divers.

To ascertain their attitudes and opinions about sharks, divers were asked to rank twelve statements on a five-point Likert-type scale, ranging from 'strongly agree' (5) to 'strongly disagree' (1). The mean scores of these twelve statements are reported in Table 5.9 and are ranked from largest to smallest.

Table 5.9: Attitudes and opinions about sharks

Statement	<i>n</i>	Mean	Std deviation
Sharks are a very important part of our whole ecosystem	378	4.7	0.63
I enjoy learning about sharks	379	4.6	0.56
More marine reserves should be established to protect all sharks	380	4.5	0.69
I think all sharks should be legally protected	377	4.0	1.03
I would like to touch a shark	376	3.9	1.16
Keeping a shark in an aquarium is cruel	378	3.4	1.18
I think human interests, especially safety, should be put before shark interests	376	3.0	1.14
I think it is acceptable to kill a shark if humans benefit from it	375	2.5	1.17
I think catching a shark on a rod would be challenging and exciting	375	2.4	1.42
I am afraid of sharks	378	2.3	1.10
I think shark teeth make good souvenirs	377	2.1	1.20
Sharks are human-eating machines	377	1.5	0.72

**Note:** 1 = strongly disagree; 2 = disagree; 3 = unsure; 4 = agree; 5 = strongly agree

The results show that respondents rated the importance of sharks (4.7) and learning about them (4.6) very highly. Many also indicated that more marine reserves should be established for sharks (4.5), that sharks should be protected (4.0) and that they were in favour of touching a shark (3.9). This last result could be due to a strong desire on the part of the respondents to get as close to sharks as possible. Respondents felt unsure about the statement about keeping a shark in an aquarium (3.4) and putting human interests before shark interests (3.0) (e.g. safety issues such as using nets to keep sharks out of areas used by humans for swimming). Respondents indicated being unsure, nearing disagreement, about the question of killing sharks for human benefit (2.5) (e.g. for medicinal purposes such as curing or treating diseases).

The last four statements were rated low by the respondents. They disagreed, for the most part, with the statements concerning the challenge and excitement of catching a

shark on a rod (2.4), being afraid of sharks (2.3), and shark teeth making good souvenirs (2.1). They strongly disagreed with the statement that sharks are human-eating machines (1.5). To analyse further respondents' attitudes towards sharks, these variables were compared to whether shark diving was the main purpose of the trip; four items yielded interesting results (see Table 5.10).

Table 5.10: Shark diving being the main purpose of the trip and attitudes about sharks

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
I am afraid of sharks					
Shark diving main purpose: No	3%	19%	16%	43%	19%
Shark diving main purpose: Yes	2%	7%	14%	29%	48%
I enjoy learning about sharks					
Shark diving main purpose: No	58%	40%	2%	0%	0%
Shark diving main purpose: Yes	75%	25%	0%	0%	0%
I think all sharks should be legally protected					
Shark diving main purpose: No	38%	30%	21%	9%	2%
Shark diving main purpose: Yes	61%	28%	11%	0%	0%
More marine reserves should be established to protect all sharks					
Shark diving main purpose: No	54%	37%	8%	1%	0%
Shark diving main purpose: Yes	75%	21%	4%	0%	0%

Of those who said that shark diving was the main purpose of their trip, a larger proportion of respondents (48%) strongly disagreed with the statement of being afraid of sharks, although many from the other group indicated that they disagreed. A larger percentage of those who stated that shark diving was the main purpose of their trip also strongly agreed with the statements regarding the enjoyment of learning about sharks, that sharks should be legally protected and that more marine reserves should be established to protect all sharks. These results show that among those who indicated that they were in Fiji primarily to go shark diving, there was less of a fear of sharks and stronger feelings regarding learning about them and having them protected. Since they had a stronger sense of purpose for taking their trip, this may have caused them to feel

more connected to sharks. Despite these findings, however, the results show that overall even those who indicated that shark diving was not the main purpose of their trip had positive attitudes towards sharks.

Overall, the results in this section, regarding attitudes towards sharks, show that respondents are concerned about the well-being of sharks, despite claims that the animals generally suffer from a negative public image (Dobson, 2008; Peschak, 2006; Thompson & Mintzes, 2002). As two respondents commented, “*Sharks need to be protected*”, and “*I hope it will be possible to see sharks in 20 years.*” These comments show that respondents view sharks as being rare and endangered, and as Dobson (2007) and Reynolds and Braithwaite (2001) claim, these types of species have a particular appeal to wildlife tourists. These two quotations concur with findings in Dobson’s (2007) study, in which shark divers commented on the rarity of sharks and the possibility of not being able to see them anymore in the future.

One-way ANOVAs were performed to determine if the variables of age and gender had any influence on respondents’ opinions and attitudes towards sharks. Although previous studies in the areas of wildlife tourism and shark diving have separately examined certain variables such as tourist demographics and attitudes towards animals (e.g. Catlin, Jones, Jones et al., 2010; Dicken & Hosking, 2009; Ryan, 1998; Woods, 2000), few have analysed the two together. Coghlan and Prideaux (2008), in their study on encounters with wildlife in Cairns, Australia, compared age and gender with tourists’ interest in wildlife viewing. As Tisdell and Wilson (2005) argue, social data has a significant influence on the value individuals place on wildlife. Coghlan and Prideaux’s (2008) study provided valuable demographic and psychographic information about

wildlife tourists and thus it was decided to compare similar variables in the current study.

Seven out of the twelve items in this attitudes question revealed significant differences between the three age groups (see Table 5.11). The oldest age group (50 years or older) indicated being less afraid of sharks (mean score of 2.1) than the middle (35–49 years; mean score 2.2) and youngest (20–34 years; mean score 2.5) age groups. A post hoc Tukey test showed that a significant difference lies between the oldest and youngest age groups. This result suggests that members of the oldest group hold less fearful attitudes towards sharks than do the younger group, which could be due to them having had more diving and general life experiences. As one respondent in the oldest group commented, *“This is my 8th dive so I brought 18 other people to learn about this experience.”* Another respondent stated, when asked about the most valuable thing gained on the trip, *“To have one diving experience more.”*

Table 5.11: ANOVAs of age and attitudes towards sharks

Attitudes	Age Groups — Means				
	20–34	35–49	50 <sup>+</sup>	<i>F</i>	Sig.
Afraid of sharks	2.5	2.2	2.1	4.56	<b>0.011</b>
Learning about sharks	4.6	4.5	4.7	3.88	<b>0.021</b>
Challenge of catching a shark on a rod	2.7	2.1	1.8	12.89	<b>0.000</b>
Keeping a shark in an aquarium is cruel	3.5	3.3	3.1	3.12	<b>0.045</b>
Sharks are human-eating machines	1.6	1.4	1.2	7.33	<b>0.001</b>
Sharks are very important to ecosystem	4.7	4.7	4.8	0.57	0.564
Shark teeth make good souvenirs	2.2	1.9	2.1	1.40	0.249
Like to touch a shark	4.2	3.8	3.4	13.62	<b>0.000</b>
Killing sharks is okay if humans benefit	2.6	2.5	2.4	1.10	0.335
All sharks should be protected	4.0	4.1	3.9	0.38	0.685
Human interests should be put before sharks	3.1	2.7	2.8	3.64	<b>0.027</b>
More marine reserves should be established	4.4	4.5	4.6	0.74	0.477

**Note:** 1 = strongly disagree; 2 = disagree; 3 = unsure; 4 = agree; 5 = strongly agree

The higher fear among younger people could be due to their general lack of experience in being exposed to animals such as sharks and thus they retain a more fearful attitude towards them. For example, some responses stated by members of the youngest group, in the open-ended section pertaining to most valuable gains from the shark diving experience, centred on the themes of conquering and reducing fears and uncertainties, gaining confidence and feeling more comfortable in the shark's environment, and coming to the overall realisation that sharks are in fact not that dangerous.

Another variable that showed a significant difference was the enjoyment of learning about sharks. The difference existed between the middle and oldest age groups. The oldest age group indicated enjoying learning about sharks the most (4.7), followed by the youngest group (4.6) and then the middle age group (4.5). The significant difference between the oldest and middle age group could possibly be explained by differing desires on a trip. The middle age group may be more in search of factors such as excitement and adventure surrounding seeing sharks up close. For example, one respondent commented that the most valuable thing gained on their trip was, "*Seeing so many sharks up close.*" The oldest group, on the other hand, may desire more of an educationally rich and more meaningful experience. For example, two respondents commented that by participating in their shark diving trip they were, "*Fulfilling a dream*" and gaining a "*Better understanding of shark behaviour.*" Despite the significant difference between these groups, the high mean score result (4.5) for the middle age group shows that learning about sharks is still very important to these individuals as well.

Attitudes regarding catching a shark on a rod showed significant differences between all the age groups. The youngest age group disagreed less strongly with the statement that

it would be exciting and challenging to catch a shark on a rod (2.7) than the middle age group (2.1), while the oldest age group disagreed the most strongly (1.8) with this statement. The differences in opinion could be attributed to the different age groups seeking different factors when on their trips. For example, the oldest group may be seeking more of an educational and meaningful experience whereas the middle age group could be looking for factors such as close encounters with sharks, adventure and excitement, as the earlier quotes have suggested. Meanwhile, the younger age group may be in search of close encounters and adventure, which are linked to the idea of catching a shark on a rod. As one member of the youngest age group commented, the shark dive was a, “*New and exciting experience, unforgettable.*” Another member of that youngest group said that the most valuable thing they had gained was, “*An unforgettable experience of seeing sharks and big fish close up.*” Even though a significant difference existed between all the age groups, the results show that the middle age group disagreed with and the younger group was not completely sure about the statement that catching a shark on a rod would be challenging and exciting.

When asked about the cruelty of keeping a shark in an aquarium, the oldest group indicated being more uncertain (3.1) while the youngest group indicated being more in agreement (3.5), which could suggest that the youngest group appreciates the need to protect and avoid harming sharks more so than the oldest group. This finding is similar to that in Cottrell’s (2003) study on recreational boaters, in which he found that as age increases environmental concern decreases. Diamantopoulos, Schlegelmilch, Sinkovics and Bohlen (2003), however, in a study on profiling greenies, claim that older individuals are more likely to display higher levels of green behaviour. Many respondents in the youngest age group mentioned a variety of positive aspects that they had gained from their trip, such as greater respect, appreciation and love for sharks. For

example, some statements given in the open-ended questions asking the most valuable thing gained from the shark diving experience included, “*Greater appreciation and respect for sharks*”, “*Awareness of the beauty of these animals*” and “*They are magnificent creatures.*” Although a significant difference existed between the two age groups, the mean score of the oldest age group (3.1) shows that these divers were by no means in favour of keeping a shark in an aquarium.

The oldest group disagreed more strongly (1.2) with the statement that sharks are human-eating machines than did the youngest group (1.6), albeit by a small margin. Open-ended comments such as, “*They are not man eaters*” and “*Although sharks are an apex predator they are not man eaters — they are opportunistic feeders*”, help to confirm the sentiments held by the older group. The fact that the youngest group indicated stronger feelings of sharks being dangerous to humans was consistent with the earlier finding that the youngest group was more afraid of sharks. Even so, the low mean score of the youngest group suggests that they still disagree with the sentiment that sharks are human-eating machines. This is further confirmed by many similar open-ended comments made by the youngest group, with themes such as, “*Sharks aren’t that scary*” and “*Sharks aren’t on a mission to kill humans.*”

There was also a significant difference regarding attitudes towards wanting to touch a shark between the youngest group and both the other two age groups. The youngest group agreed the most strongly (mean score of 4.2) that they would like to touch a shark, followed by the middle group (3.8) and then the oldest group (3.4). A number of respondents from the youngest age group mentioned that they had touched a shark on their dive, whereas no mention of this was made from either the middle or oldest age groups. This result suggests that the youngest group may be looking for more

excitement and thrills on their shark diving trip whereas the middle and especially the oldest group may be less interested in those factors and more so in different ones, for example, education and learning, as some of the comments quoted earlier have already demonstrated.

Finally, there was a significant difference between the youngest and middle age groups regarding the statement about putting humans' interests before sharks', with the youngest group agreeing slightly more strongly (3.1) with this statement than the middle group (2.7). The mean scores, however, show that both groups are unsure as to whether humans' interests should be put before those of sharks'. Despite this uncertainty, members of both groups said that their dive experience had given them a greater fondness for sharks; for example by making comments such as they have, "*A new respect for the animals*", "*A greater love for them*", and more of "*An appreciation of sharks as part of our ecosystem.*"

Despite the significant differences shown between age and the seven items listed above, the mean scores, for the most part, were quite close between all ages. Moreover, although studies have examined relationships between age and environmental concern (Cottrell, 2003; Diamantopoulos et al., 2003), as Diamantopoulos et al. (2003) argue, associations between socio-demographic characteristics and environmental concern are relatively complex. They also claim that environmental consciousness is perhaps more a function of situational characteristics rather than socio-demographic idiosyncrasies.

The remaining five statements, from the twelve attitude scales, produced no significant differences. Overall, regardless of whether one-way ANOVAs showed any significant differences, the results indicate that respondents from all age groups hold favourable

attitudes towards sharks. A member of the youngest group demonstrated this by stating, *“Sharks are amazing creatures and should be respected.”* A member of the middle age group said that, *“One other way to protect sharks, is to make them well known”* and a respondent from the oldest group commented that they want to, *“Learn as much as possible about them and help educate the public of their importance.”*

The subsequent paragraphs report and discuss one-way ANOVA results for gender and attitudes towards sharks. The ANOVA results show that only four out of the twelve questions were significantly different for gender: the challenge of catching a shark on a rod, keeping a shark in an aquarium is cruel, shark teeth make good souvenirs and killing sharks is okay if humans benefit (see Table 5.12).

Table 5.12: ANOVAs of gender and attitudes towards sharks

Attitudes	Gender — Means			
	Male	Female	<i>F</i>	Sig.
Afraid of sharks	2.3	2.5	3.38	0.067
Learning about sharks	4.6	4.6	0.95	0.331
Challenge of catching a shark on a rod	2.6	2.0	21.78	<b>0.000</b>
Keeping a shark in an aquarium is cruel	3.3	3.6	6.56	<b>0.011</b>
Sharks are human eating machines	1.4	1.5	0.14	0.706
Sharks are very important to ecosystem	4.7	4.8	1.36	0.245
Shark teeth make good souvenirs	2.2	1.9	5.98	<b>0.015</b>
Like to touch a shark	4.0	3.8	3.74	0.054
Killing sharks is okay if humans benefit	2.7	2.4	4.99	<b>0.026</b>
All sharks should be protected	4.0	4.1	1.71	0.192
Human interests should be put before sharks	3.0	2.9	0.62	0.432
More marine reserves should be established	4.5	4.5	0.20	0.651

**Note:** 1 = strongly disagree; 2 = disagree; 3 = unsure; 4 = agree; 5 = strongly agree

The results for the challenge of catching a shark on a rod showed a significant difference between males and females: males disagreed less strongly with this statement (mean score of 2.6) than did females (2.0). The difference in attitudes may suggest that

the activity of catching a shark on a rod is more exciting and appealing to males than females. Despite females disagreeing with this sentiment, males were not in total agreement either. Their mean score was at a level between being in disagreement and uncertain on the issue, which shows that overall the males in this study were not overly enthusiastic about the idea of catching a shark on a rod. This result is consistent with the results from the other attitude statements in which it has been shown, regardless of gender, that respondents have a high appreciation and concern for the well-being of sharks. Thus, in the minds of even the male respondents, fishing for sharks may be considered a harmful activity.

The statement about keeping a shark in an aquarium being cruel also showed a significant difference in attitudes between the genders: females agreed more (3.6) than males on this issue (3.3). This result indicates that females feel slightly more strongly than do males about activities or practices which harm sharks, or that females are less interested in the idea of keeping and viewing sharks outside of their natural environment. Even so, although a significant difference was revealed, overall the mean attitude scores of male and female respondents were not that far apart when it comes to whether keeping a shark in an aquarium is cruel. This demonstrates that males, as well as females, consider it cruel to keep sharks in an aquarium. As one male respondent stated, regarding what he would be willing to do for the sake of conserving sharks, *“Help spread the word that sharks are not man eaters and need to be saved, especially from shark finning.”* A female respondent said she would be willing to *“Participate in any activities that deal with the conservation of sharks and their environment.”*

A significant gender difference also existed regarding the opinion of shark teeth making good souvenirs. Male respondents disagreed less strongly with this sentiment (2.2) than

did females (1.9). Females disagreeing more may indicate, like the issue relating to the cruelty of keeping a shark in an aquarium, that females are slightly more in favour of protecting and conserving sharks. The mean scores of both genders, however, do indicate that overall there is a general disagreement with the idea of shark teeth making good souvenirs. Respondents may have viewed this statement as harmful to sharks, (for example, the idea of killing or hurting a shark for the purpose of extracting their teeth for consumer use), and thus felt it to be unacceptable. As two female respondents commented, they would, *“Not buy anything shark related, i.e. souvenirs, or eat anywhere serving shark”* and *“Speak up when I hear about ‘fin soup’ or ‘shark teeth’ necklaces.”* Two male respondents said they would, *“Stop buying shark products”* and *“Avoid products/producers that violate environmental conservation.”*

Finally, when asked to indicate whether the killing of sharks is acceptable for human benefit, a significant difference existed between genders: females disagreed more strongly (2.4) than males did on this issue (2.7). A lower mean score for females suggests that they are slightly more concerned for the overall welfare of sharks. The mean scores, for both genders, however, showed more of an uncertain attitude regarding the acceptability of killing sharks for human benefit.

The one-way ANOVA results for gender and the four attitude statements showing significant differences suggest that females have higher disagreement levels with these statements than do males. Diamantopoulos et al. (2003) claim that, on the whole, females have been found to exhibit higher concern and participate more frequently in various types of green behaviour. However, they also argue that the explanatory power of socio-demographics is weak regarding the association with environmental concern. Moreover, although the four attitude statements discussed in this section did show

significant differences, the fact that the mean scores for both genders were not that far apart shows that the well-being of sharks is important to all respondents, regardless of gender. ANOVA results for the other eight attitude items showed no significant differences between the genders and the males' and females' mean scores were also very close.

Respondents were asked to rate the importance of eight different statements on a five-point Likert-type scale (1 being 'not at all important' through to 5 which is 'very important'), concerning important factors on a shark diving trip (see Table 5.13).

Table 5.13: Important factors on a shark diving trip

<b>Statement</b>	<b><i>n</i></b>	<b>Mean</b>	<b>Std deviation</b>
Ensuring no sharks are harmed	374	4.6	0.54
Thrill of seeing sharks up close	378	4.6	0.64
Having fun	377	4.5	0.68
Opportunity to learn new things	380	4.5	0.63
Educational information provided by dive operator	377	4.4	0.70
Feeling safe	379	4.4	0.84
Being with people with similar interests	377	3.7	1.06
Taking photographs	379	3.4	1.25

**Note:** 1 = not at all important; 2 = not very important; 3 = unsure; 4 = important; 5 = very important

The two factors rated most importantly were ensuring no sharks are harmed during the dive (4.6) and the thrill of seeing sharks up close (4.6). These two mean scores further help to demonstrate the respondents' great appreciation of sharks and their desire to get close to and learn more about them. These two results are similar to Tschapka's (2006) study, in which he found that scuba divers rated 'to look at underwater animal and plant life' and 'to learn more about the underwater environment' both highly. Scuba divers in Bennett's (2002) study indicated that the 'opportunity to learn about marine flora/fauna' was the most important reason for scuba diving in Phuket. Dimmock (2010) found that

for scuba divers in her study, the presence of marine flora and fauna in their natural habitat was a much anticipated and positive feature of diving. The desire for close proximity to animals is also one of the features of the wildlife tourism experience, likely to encourage mindfulness, found in Woods and Moscardo's (2003) model and shows the affective impact, also a stage in Orams' (1996b) model, of the shark diving experience.

The mean scores for important factors on a shark diving trip are also consistent with various comments made by respondents, such as two who said they had an "*Added appreciation for sharks*", and the most valuable thing gained was "*The whole package, seeing sharks in their environment and learning about them.*" Although Orams (2000) found in a study on whale watchers in Tangalooma, Australia, that getting close to whales was not an important factor for tourists, many other studies have shown that close encounters with targeted species is highly important within the realm of marine wildlife tourism (Catlin and Jones, 2009; Dobson, 2007; Finkler and Higham, 2004; Valentine, Birtles, Curnock, Arnold, & Dunstan, 2004). The current study is consistent with these findings that concern for animals and the desire for close encounters with them is important to tourists.

Respondents indicated that having fun (4.5), the opportunity to learn new things (4.5), educational information provided by the dive operator (4.4) and feeling safe (4.4) were all important factors on a shark diving trip. For example, one respondent felt that the experience was, "*Super fun and exciting*" and another was, "*Very impressed with the safety.*" Many previous studies have shown that tourists feel that these factors are important in a variety of other settings as well; for example, ecotourism, wildlife tourism and marine tourism (Beaumont, 2001; Curtin, 2008; Lück, 2003a; Lück &

Jiang, 2007; Packer, 2006; Tschapka, 2006; Packer & Ballantyne, 2004; Schänzel & McIntosh, 2000; Stein et al., 2003). These studies show that all of these factors are interconnected; for example, the importance of having fun while learning, or the importance of education and learning as major components to an overall satisfying experience. As one respondent stated, there was a “*Need for more environmental education as a component to the dive*” and another said that the shark dive was a “*Learning experience.*” The fact that the former quotation describes a need for more environmental education, along with the high importance ratings respondents placed on learning and education, suggests that dive operators could pay closer attention to making a bigger impact and connection to divers through interpretation (Woods & Moscardo, 2003; Orams, 1996b).

The second least important factor for respondents when on a shark diving trip was being with people with similar interests, which received a mean score of 3.7. This result concurs with Bennett’s (2002) study in which she found that divers rated ‘social activity’ and ‘being with friends/associates’ lower than many other important reasons for scuba diving. Tschapka’s (2006) study also shows that divers rated social aspects, such as meeting new people and doing things with friends and family, lower than others. Although 3.7 is by no means a low mean score, it was lower in comparison with many of the other important factors, which tends to refute the argument that diving, in general, is a highly social activity (Cater, 2008; Meisel-Lusby & Cottrell, 2008). Fitzsimmons (2008), however, suggests that more experienced divers are more likely to appreciate sharing enjoyment with others than are less experienced divers. For example, one respondent who had participated in more than seven wildlife tourism activities stated that the main purpose of their trip to Fiji was simply, “*Tourism with family.*” Another respondent said that the purpose of their trip was to, “*See the country with friends.*”

Many respondents in this study indicated never having dived with sharks before, which could possibly explain the slightly lower rating given to the importance of sharing experiences with like-minded people on a shark diving trip. For some respondents, it may have been the very activity of shark diving itself which compelled them more so than any other factors, including social ones. As one respondent commented, when asked about the most valuable thing they had gained on the trip, “*Simply the experience itself.*” Another respondent said that “*The shark dive was definitely a must do in Fiji.*” Earlier findings, particularly those indicating that many respondents were travelling alone, may suggest that these individuals were focused enough on the activity to participate in it even by themselves.

Respondents rated taking photographs (3.4) as the least important factor when on a shark diving trip. Tschapka (2006) and Bennett (2002) also found that divers did not have a strong interest in underwater photography. This factor could have been rated the lowest because it is a highly complex activity, requiring specialised equipment, skills and training. Being that many respondents indicated that this was their first shark diving experience and many revealed to the researcher that they were new to the sport of scuba diving, the task of taking underwater photographs may have been too difficult and thus much less desirable, or even possible.

Revisiting the variable of shark diving being the main purpose of the trip, it was also compared to the eight importance factors. Only three of these items, however, revealed interesting results. A larger percentage of those who said shark diving was the main purpose of their trip also rated the opportunity to learn new things (68% compared to 53%), educational information provided by the operator (60% compared to 48%) and ensuring no sharks are harmed (77% compared to 66%) as being ‘very important’. The

fact that these respondents were there with more of a specific purpose could have caused them to indicate feeling a stronger connection to sharks, both in terms of learning about them and ensuring they are not harmed. Overall, though, even those who stated that shark diving was not the main purpose of their trip rated each of these three items as being quite important (i.e. when combining each of the scores within the categories of important and very important they all received over 90%).

Just as one-way ANOVAs were performed in the analyses for attitudes towards sharks, these same statistical tests were used to see if age or gender has any influence on what divers see as important factors on a shark diving trip. The results of the one-way ANOVAs show that only two of the eight importance factors on a shark diving trip are significantly different between the age groups: the thrill of seeing sharks up close, and having fun (see Table 5.14). This again echoes the sentiments of Diamantopoulos et al. (2003) regarding the complexity of socio-demographics and their weak explanatory power.

Table 5.14: ANOVAs for age and important factors on a shark diving trip

Importance factors	Age Groups — Means				
	20–34	35–49	50 <sup>+</sup>	<i>F</i>	Sig.
Opportunity to learn things	4.5	4.5	4.7	2.56	0.079
Thrill of seeing sharks up close	4.7	4.5	4.4	7.28	<b>0.001</b>
Having fun	4.7	4.4	4.2	13.51	<b>0.000</b>
Educational information provided by operator	4.4	4.3	4.5	1.66	0.191
Feeling safe	4.4	4.4	4.4	0.01	0.995
Being with people with similar interests	3.7	3.6	3.9	1.12	0.329
Taking photographs	3.4	3.5	3.6	0.76	0.468
Ensuring no sharks are harmed	4.6	4.7	4.7	2.08	0.126

**Note:** 1 = not at all important; 2 = not very important; 3 = unsure; 4 = important; 5 = very important

A significant difference existed between the youngest and oldest age groups with regards to the thrill of seeing sharks up close. The youngest age group felt this factor was more important (mean score of 4.7) than did the oldest group (4.4). A few respondents from the youngest group further displayed this sentiment by making comments, to the open-ended question of what was the most valuable thing gained from their trip, such as being excited to “*See sharks in their natural environment*” and to “*Swim with sharks and watch how they behave in their own habitat.*”

These results suggest that the younger divers may be seeking factors such as thrill and adventure more so than the oldest group. Despite the significant difference, the high mean score of the oldest age group suggests that they too are interested in the thrill of seeing sharks close up and in adventure factors when on a shark diving trip. In the open-ended question asking about the most valuable thing gained, a recurring theme among all the age groups was “*The excitement of being able to see sharks close up.*”

A significant difference existed between the youngest group and the older two groups regarding the importance of having fun when shark diving. The youngest age group felt that having fun was more important (mean score of 4.7) than did the middle (4.4) and oldest groups (4.2). This result suggests that for the youngest group, seeking an adventurous and fun-filled activity like shark diving is more important than for the other groups. Despite the significant difference, however, the mean scores of each group are not that far apart. According to the mean scores of the middle and oldest age groups, having fun is a highly important factor for them as well. Having fun is most likely a factor sought by many tourists, regardless of their age, and especially while pursuing adventure-based activities like shark diving and scuba diving in general. Many respondents, from all the age groups, commented that the most valuable thing they

gained from their trip was a “*Fun experience.*” Meisel-Lusby and Cottrell (2008) found in their study exploring motivations and expectations of scuba divers that the top motivation for diving was ‘for fun’.

The following paragraphs report and discuss one-way ANOVA results for gender and important factors on a shark diving trip. Only two factors showed significant differences between males and females: the importance of educational information provided by the dive operator, and feeling safe on a shark dive (see Table 5.15).

Table 5.15: ANOVAs for gender and important factors on a shark diving trip

Importance factors	Gender — Means			
	Male	Female	<i>F</i>	Sig.
Opportunity to learn things	4.5	4.6	3.59	0.059
Thrill of seeing sharks up close	4.6	4.5	3.34	0.069
Having fun	4.5	4.6	1.21	0.273
Educational information provided by operator	4.3	4.5	7.17	<b>0.008</b>
Feeling safe	4.3	4.6	11.55	<b>0.001</b>
Being with people with similar interests	3.6	3.8	2.83	0.093
Taking photographs	3.4	3.4	0.14	0.709
Ensuring no sharks are harmed	4.6	4.7	1.56	0.212

**Note:** 1 = not at all important; 2 = not very important; 3 = unsure; 4 = important; 5 = very important

A one-way ANOVA revealed that a significant difference existed between females (mean score of 4.5) and males (4.3) regarding the importance of educational information provided by the operator on a shark diving trip. This result suggests that females value the importance of being educated about sharks slightly more than do males. Despite the significant difference, the high mean scores of both genders, not to mention their closeness, show that receiving educational information is an important factor for male as well as female respondents. Many respondents of both genders commented that they would have liked, “*More educational information*” provided to them on their trip.

A significant difference also existed regarding feeling safe on a shark diving trip: this factor was more important for females (4.6) than for males (4.3). This result may suggest that males have more of a carefree attitude and may be more willing to take risks outside their comfort zones. When comparing this score with the seven other important factors, the fact that it received such a high mean score from females indicates that it is one of the most important considerations for them when participating in an activity such as shark diving. Despite the significant difference, overall the high and close mean scores of both genders show that feeling safe is also quite important to males when on a shark diving trip.

One-way ANOVA results for the other six important factors on a shark diving trip showed that no significant differences existed between genders. Despite significant differences or not, themes which have clearly emerged from the results regarding important factors on a shark diving trip, are that regardless of gender the majority of respondents value highly seeing sharks up close, having educational information provided and the opportunity to learn about sharks, having fun on a shark diving trip, and the notion of ensuring that no sharks are harmed.

#### **5.4 Towards a classification of shark tourists?**

This chapter has presented demographic and psychographic results and analyses, taken exclusively from the on-tour questionnaire, which have provided an overview of the participants of this study. The results in this chapter, like in other studies conducted on scuba divers, have shown that shark divers tend to be typically male, in their twenties, thirties and forties, with a high level of education and an above average income (Stolk et al., 2005; Jennings, 2003) and many reside in a wide variety of countries worldwide (Musa et al., 2006; Bennett, 2002). This chapter has also shown that the study's

respondents are very diverse and that demographic characteristics only played a small role regarding important factors on a shark diving trip and attitudes towards sharks. These divers are an international group of individuals, many of whom were not in Fiji primarily to dive with sharks and they listed a huge variety of reasons for the main purpose of their trip as well as motivations for choosing the activity of shark diving. The majority of the respondents had many other wildlife tourism experiences, yet fewer than half had ever been shark diving before and they provided a wide variety of words to describe sharks and someone who participates in shark diving.

Overall, the results have shown that many of the shark diving respondents in this study are similar to a description of general naturalists in wildlife tourism given by Curtin (2008, p. 89). She describes these types of individuals as “clients who have a general interest in nature, neither experts nor specialists. They are primarily vacationers, who enjoy combining a love of wildlife with a holiday experience.” Participants in this study may not fit exactly into the first part of Curtin’s (2008) description, because it could be argued that they are somewhat specialists due to their requiring scuba diving certification and thus a higher degree of knowledge and expertise than for other forms of wildlife tourism such as bird or whale watching. When it comes to wildlife and nature in general, results indicate that the majority of respondents in this study are neither experts nor specialists but rather have an interest and concern for sharks and wildlife and enjoy combining their love of them with a holiday experience.

Although the results in this chapter begin providing an overview of respondents’ characteristics, some also show that tourists are not homogenous (Garrod & Gössling, 2008a; Mehmetoglu, 2004; Mo, Howard and Havitz, 1993). Mehmetoglu (2005) contends that there exists no general agreement among tourism scholars as to who a

nature tourist is and that in the literature there is no commonly accepted definition of a nature tourist. Defining diving tourists is also fraught with difficulties, since they too are a diverse group (Bennett, 2002; Tschapka, 2006; Garrod, 2008; Garrod & Gössling, 2008a). Developing an all-encompassing definition of the ‘shark tourist’ therefore remains a complex task. As McKercher (2002) argues, in a study focusing on tourists in cultural-type settings, operational definitions are deficient in many areas and labels such as ‘cultural tourists’, or in the case of this study ‘shark tourists’, have inherent inferences about a quality or depth of experience which may not be justified. The fact that 85% of respondents indicated that diving with sharks was not the ‘main purpose’ of their trip to Fiji provides sufficient evidence of the difficulties inherent in trying to define these individuals as ‘shark tourists’.

Many researchers over the years have recognised the heterogeneous nature of tourists and as such developed typologies in an attempt to classify them (e.g. Cohen, 1972, 1973, 1974, 1979; Plog, 1974; Bryan, 1977; Dann, 1981; McKercher, 2002; Yiannakis & Gibson, 1992; Mo et al., 1993; Mehmetoglu, 2004, 2005, 2007). Although authors have argued in favour of developing typologies in order to classify tourists (Garrod, 2008; Dann, 1981), this too remains a complex task. As Dann (1981, p. 194) argues, “typologies are useful in that they provide a simple classificatory scheme within a complex phenomenon.” He also claims that there is definitional fuzziness surrounding tourist motivation and even though he examined seven different approaches to tourist motivation, he admits there are many others as well.

When analysing some of the findings presented in this chapter it was realised that trying to define or even classify the respondents in this study proved an extremely difficult task. These individuals could effectively be placed within a variety of the many

typologies that have been devised by researchers in the past thirty plus years. For example, some of the respondents in this study could fit within Cohen's (1973) classification of the mass-drifter or somewhere within one, or more, of Yiannakis and Gibson's (1992) thirteen leisure based tourist roles or within an adapted form of McKercher's (2002) Classification of Cultural Tourists Model.

The fact that a large majority of respondents were not in Fiji primarily to dive with sharks shows that these individuals could be placed within the category of Rice's (1987) 'tourist diver', i.e. one who engages in scuba diving as part of a vacation, yet it may not be the main motivator behind the vacation (MacCarthy et al., 2006; Musa et al., 2006). Rice (1987) developed a classification for divers in which he proposed three broad types of divers, ranging from hard core, to tourist to potential. For those that indicated that shark diving was the main purpose of their trip, they could be classified as 'hard core' divers, i.e. one who is in search of the challenge of the dive destination as well as the specific flora and fauna associated with a particular locale (MacCarthy et al., 2006; Musa et al., 2006; Rice, 1987). Respondents in this study could even be placed within a combination of spots in other continua such as Mehmetoglu's (2004, 2005, 2007) specialist to naturalist, active to passive, individualistic to collectivistic or within Bryan's (1977) recreational specialization continuum. Bryan (1977) created the following four typologies, based on degree of specialization, to classify trout fishermen: occasional fishermen, generalists, technique specialists or technique-setting specialists, which could possibly be adapted and applied to shark diving.

For the sake of simplicity, many of the typologies listed above could be useful on their own, or even modified, in order to classify the respondents in this study. However, on a more complex level, it has become quite clear that this exploratory study has begun

providing more questions regarding the heterogeneity of one who participates in the activity of shark diving than it has answers. More research is thus required in order to continue working toward trying to define or even classify, if at all possible, a 'shark tourist'.

### 6.1 Introduction

This chapter presents results, and discussions, based on the on-tour questionnaire and responses from operator interviews. A variety of univariate, one-way ANOVAs and open-ended analyses were performed on the on-tour questionnaire responses in order to examine features of the respondents' shark-diving experience. The main aspects analysed in this chapter include respondents' attitudes and feelings about their overall shark diving experience and the concept of education and interpretation as well as its impact on them.

### 6.2 Respondents' attitudes and feelings about the shark diving experience

This section addresses the first aim of the study by presenting results regarding respondents' impressions and feelings about their on-tour shark diving experience. When asked about overall satisfaction levels regarding the shark diving experience, the majority (97.3%) of the respondents indicated being either 'satisfied' or 'very satisfied'. No respondent reported being 'not at all' satisfied and only two respondents (0.5%) indicated being 'not very satisfied'; four respondents (1.1%) were 'unsure' and another four did not indicate any satisfaction level (see Table 6.1). These results are consistent with other studies which have shown high levels of satisfaction among scuba divers in general (Musa et al., 2006; Stolk et al., 2005; Bennett, 2002; Musa, 2002)

On-site observations by the researcher, particularly while on the boat during shark diving trips, further revealed respondents' feelings of excitement and satisfaction, for

example, through facial expressions and gestures such as ‘high-fives’. Respondents also made comments along the lines of the shark dive being “*An exciting experience good for life.*” The opportunity to view large animals in their natural environment is something that is cherished by many wildlife tourists and may help to explain the high levels of satisfaction. As Cater (2008) contends, the desire to see big fish, especially sharks, is a significant motivator for many marine tourists and diversity and quality of fish is a key attraction for scuba diving in general (Meisel-Lusby & Cottrell, 2008; Tschapka, 2006; Stolk et al., 2005; Musa et al., 2006; Bennett, 2002; Ditton et al., 2002; Musa, 2002). These ideas are supported by results in the previous chapter, especially regarding many respondents indicating a love for and appreciation of sharks as well as their desire to get close to them.

Table 6.1: Satisfaction levels with the shark diving experience

<b>Satisfaction level</b>	<b>%</b>
Very satisfied	68.9
Satisfied	28.4
Unsure	1.1
Not very satisfied	0.5
Not at all satisfied	0.0
No satisfaction level indicated	1.1
<b>Total</b>	<b>100%</b>

Although for a large majority of respondents shark diving played little or no role in the decision to visit Fiji, results here indicate that while participating in the activity, they ended up having a highly satisfying experience.

Respondents were asked more specific questions concerning how they felt about the on-tour experience. One such question focused on the effectiveness of operators at increasing awareness about issues relating to sharks and the environment as well as in respondents’ overall learning. The mean scores in Table 6.2 indicate that respondents

were caught between feeling uncertain about the dive operators' effectiveness and that they felt the dive operators were effective in all three of these areas.

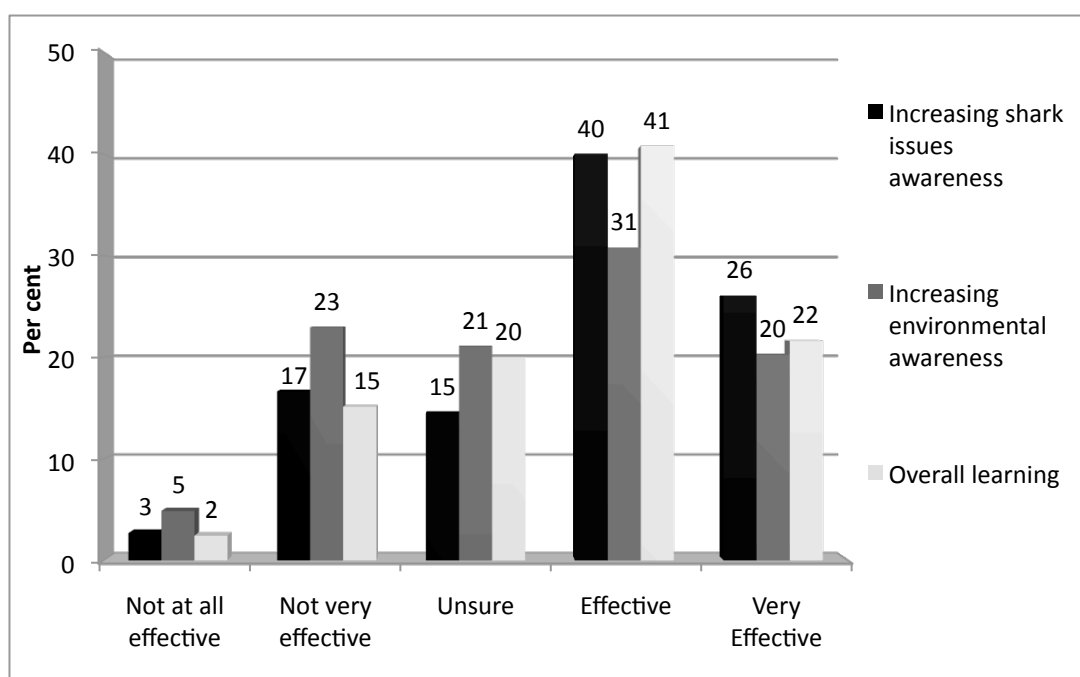
Table 6.2: Feelings regarding the effectiveness of on-tour dive operators — mean scores

Statement	<i>n</i>	Mean	Std deviation
Operator effectiveness at increasing awareness about shark issues	372	3.7	1.11
Operator effectiveness in overall learning	370	3.6	1.06
Operator effectiveness at increasing environmental awareness	370	3.4	1.18

**Note:** 1 = not at all effective; 2 = not very effective; 3 = unsure; 4 = effective; 5 = very effective

Frequency results (percentages) show that the majority of the respondents felt that operators were 'effective' or 'very effective' at increasing awareness about shark issues (66%) and in their overall learning (63%) (see Figure 6.1).

Figure 6.1: Frequency results of feelings regarding effectiveness of the on-tour dive operator



However, the result for operator effectiveness at increasing environmental awareness shows that respondents were not as convinced about this item, with barely half of the respondents (51%) feeling that operators were 'effective' or 'very effective' at increasing environmental awareness; this suggests there is room for improvement in this area. Open-ended comments suggest that respondents desired more from the operators. For example, one respondent stated, "*There could be more emphasis on education*", while another said the operators, "*Need more environmental education as a component to the dive.*" These results are similar to findings in Dearden, Bennett, and Rollins' (2007) study in which they found that scuba divers were satisfied with the provisioning of educational information yet still desired more from the operator. The results in this section, and the previous one regarding satisfaction levels, contain critical elements of Orams' Interpretation Model. For example, the fact that most respondents indicated being highly satisfied with the dive, especially regarding close encounters with sharks, shows that the affective domain is being positively impacted. The fact that learning and education are important to respondents shows that there is potential to tap into their cognitive domain as well. With this knowledge, dive operators could improve their efforts in the first two stages of Orams' (1996b) model and by further providing opportunities and motivations to act, they could potentially influence changes in diver behaviours.

The operator effectiveness items were also analysed in relation to shark diving being the main purpose of the trip. The percentage counts of very effective and effective were higher for each of the three items among those respondents who said that shark diving was the main purpose of their trip; 86% (compared to 63%) for operator effectiveness at increasing awareness of sharks, 71% (compared to 47%) for increasing awareness of other environmental issues, and 80% (compared to 59%) for overall learning. Higher

percentages of respondents who said that shark diving was not the main purpose of their trip, however, felt unsure about each of the three items. Being that these individuals did not travel to Fiji mainly for shark diving, it is possible that they were more unsure of what to expect, whereas those who were there mainly for shark diving knew what they wanted, felt a greater sense of connection to the activity and thus felt stronger about operator effectiveness.

Respondents were asked to rate six statements on a Likert-type scale from ‘very likely’ (5) to ‘very unlikely’ (1) regarding the likelihood of their taking future actions for the sake of sharks and the environment. They indicated being likely to promote shark diving to others (as an opportunity for them to learn more about sharks) (4.4), take opportunities to talk more positively about sharks (4.3), do more research on them (4.2) and do more for the environment (4.1) (see Table 6.3).

Table 6.3: Likelihood of taking future actions for sharks and the environment

<b>Statement</b>	<b><i>n</i></b>	<b>Mean</b>	<b>Std deviation</b>
Promote shark diving to others	370	4.4	0.82
Take opportunities to talk more positively about sharks	365	4.3	0.79
Do more research on sharks	368	4.2	0.92
Do more for the environment	366	4.1	0.96
Donate money to shark conservation	368	3.6	0.99
Join a conservation group	367	2.9	1.08

**Note:** 1 = very unlikely; 2 = unlikely; 3 = unsure; 4 = likely; 5 = very likely

Respondents indicated being less likely to donate money (3.6) and to join a conservation group (2.9). These last two results are similar to findings in Stamation et al.’s (2007) study where, in their examination of on-tour intentions and post-tour actions of land-based and boat-based whale watchers in New South Wales, Australia, they found that few respondents donated money or were actively involved in helping an environmental

group. The results in the current study suggest that respondents may be more likely to perform less resource-intensive actions (i.e. those that don't involve time and money) but less likely to perform slightly more resource-intensive actions, such as donating money to and/or joining a shark conservation group.

The results in this study suggest that the on-tour shark diving experience had a positive impact on respondents' attitudes and intentions to perform a variety of future actions for the sake of sharks and the environment. Tisdell and Wilson's (2005) study on turtle watching in Mon Repos Conservation Park, Australia, also shows that many respondents felt satisfied and influenced by their trip, and indicated intentions to take future pro-environmental actions. Lee and Moscardo (2005) argue, in their study on ecotourism resorts, that highly satisfying experiences can lead to reinforcing favourable environmental attitudes.

Lemelin and Wiersma (2007) found in their study on polar bear tourism that few respondents indicated any conservation behaviour changes they might engage in when returning home from their trip. Their results may be due to the fact that polar bear tourism is a less intimate and more distant experience (as in the proximity to which bears can be approached versus that of sharks) and so its potential to impact tourists could be diminished. Curtin (2008) argues that close proximity to wildlife is a key feature of the wildlife visitor experience. She found in her study on British wildlife tourists that there is a strong link between close proximity and memorable wildlife experiences. Schänzel and McIntosh (2000) found that visitors to Penguin Place in Otago, New Zealand, believed their satisfaction stemmed from the notion 'the closer the better'.

The close encounter experienced by respondents in the current study may have influenced them to think more about issues concerning sharks and the environment and as a result inspired them to indicate intentions to take a variety of future actions. As two respondents commented, “*The act of seeing so many sharks close up has changed how I look at them*”, and “*Witnessing their majesty up close, I may be more inclined to support causes that promote their welfare.*” These two comments again show that the divers’ affective domains are being positively impacted. However, as a desire for more educational information has also been mentioned by numerous respondents, Orams (1996b) would argue that the cognitive element of the diving experience is lacking. He would also urge the operators to provide divers with more opportunities and incentives to act thus resulting in their likelihood to perform more actions. In order to measure their intentions, respondents were asked in the follow-up questionnaire whether or not they had actually performed any of the six actions relating to shark and environmental conservation, such as talking about the sharks or joining a shark conservation group. The results to that question are reported and discussed in the next chapter.

Respondents were asked what they felt was the most valuable thing gained during their trip. The 303 raw open-ended answers were analysed and responses that were similar were combined into themes. The 21 themes were then quantified to ascertain counts and percentages. The five most frequently occurring themes were: greater general knowledge/awareness of sharks (24.4%), being able to see sharks close up (16.8%), a good time/cool experience (15.5%), a greater respect/appreciation for sharks/marine life (12.2%), and overcoming fears (7.3%) (see Table 6.4). Musa et al. (2006) also found in their study that divers rated the variety of beautiful marine life, the beauty of the coral reef and underwater landscape as the best aspects of their trip, which are similar to the second most valuable gain in this study. Overall these results show that shark diving is

very much an affective experience. However, mention of greater knowledge/awareness of and respect for sharks also shows elements of divers' desires to have a cognitively stimulating experience as well.

Table 6.4: The most frequently occurring responses to the most valuable thing gained on the shark diving experience

<b>Most valuable gain</b>	<b>Count</b>	<b>%</b>
Greater general knowledge/awareness of sharks	74	24.4
Being able to see sharks close up	51	16.8
A good time/Cool experience	47	15.5
A greater respect/appreciation for sharks/marine life	37	12.2
Overcoming fears	22	7.3

**Note:** these are only the five most frequently occurring out of the 21 themes developed from the original 303 responses

Only the results for the five most frequently occurring themes have been reported because the other sixteen themes had much lower counts and percentages. The results of the 'top five' themes for the most valuable thing gained during the shark diving experience show that many of the respondents in this study had a good experience despite shark diving not being central in their decision to travel to Fiji. The results for the respondents' most valuable gains suggest a high degree of appreciation of and respect for sharks as well as their desire to get close to and learn more about them. These results are also consistent with features in Woods and Moscardo's (2003) model likely to encourage mindfulness and suggest that mindful elements are inherent in the shark diving environment. For example, a high degree of appreciation for sharks shows a high interest level in wildlife, which is one of the features of the tourist, a desire to get close to sharks is similar to close proximity to animals, which is a feature of the experience, and learning more about sharks shows a personal connection being made to the subject, which is another tourist feature within the model.

Dicken and Hosking (2009) in their study on shark dive participants at Aliwal Shoal Marine Protected Area, South Africa, asked respondents to list their best experiences during the dive and found, similar to this study, that the ability to interact with a large group of sharks in their natural environment was rated as a key factor of the trip. This was a key factor for shark divers in Dobson's (2007) study as well. In a study on whale-watching participants in the San Juan Islands, Washington, Andersen and Miller (2006) asked tourists to list what was most memorable about their trip and found that the most frequent responses were seeing whales and learning about them. Curtin (2005; 2008) and Schänzel and McIntosh (2000) found that being immersed in an animal's environment increased visitor satisfaction. In Valentine et al.'s (2004) study on tourist-whale interactions in Great Barrier Reef, Australia, they found significant correlations between visitor satisfaction and amount of time spent with the animals. These examples help to verify the notion that being in an animal's natural environment and firsthand experiences with wildlife are essential elements of a wildlife tourism trip and that these elements contribute to positive attitudes towards the wildlife, which possibly lead to their conservation (Moscardo, 2007).

### **6.3 Respondents' attitudes towards on-tour education and interpretation**

To this point in the thesis, the results reported have focused mainly on gaining further insights into various aspects such as respondents' demographic and psychographic characteristics as well as a variety of attitudes and feelings about their shark diving experience. Another important concept that is central to this study is the role of education and interpretation at the chosen shark diving sites. As Townsend (2008) states, by providing various on-site interpretive materials operators can increase visitors' knowledge which may ultimately lead to improving their attitudes and behaviours as well as enhancing their overall experiences. Tilden (2007) also believes

that providing interpretive materials is a way for operators to implore visitors to better understand themselves and find personal meaning and inspiration. Understanding the impacts and the significance of interpretational efforts is an important element to this thesis and of particular relevance, as previously mentioned, are the models of Woods and Moscardo (2003), describing features likely to encourage mindfulness in wildlife tourism settings, and Orams (1996b), in which he argues a well structured interpretation programme should ultimately prompt changes in tourists' behaviours.

This section presents results and discussions that demonstrate the respondents' impressions and feelings regarding on-tour education and interpretation generally, on any trip, as well as within the context of a shark diving trip. Findings in this section focus on the following aspects: respondents' satisfaction with the educational information provided by the dive operator, suggestions for making the delivery of educational information as effective as possible, the importance of learning on any trip, any information learned during the shark diving trip, and the possibility of anything learnt on the trip influencing behaviour changes once the respondents return home.

In the on-tour questionnaire, the divers were asked to indicate how satisfied they were with the following two main statements: overall educational information provided by the operator and any other educational information provided by the operator (e.g. through websites, email, etc.). Respondents' mean scores indicated that they were close to but not completely satisfied with overall (3.8) educational information provided by the operator and other (3.6) educational information provided (see Table 6.5).

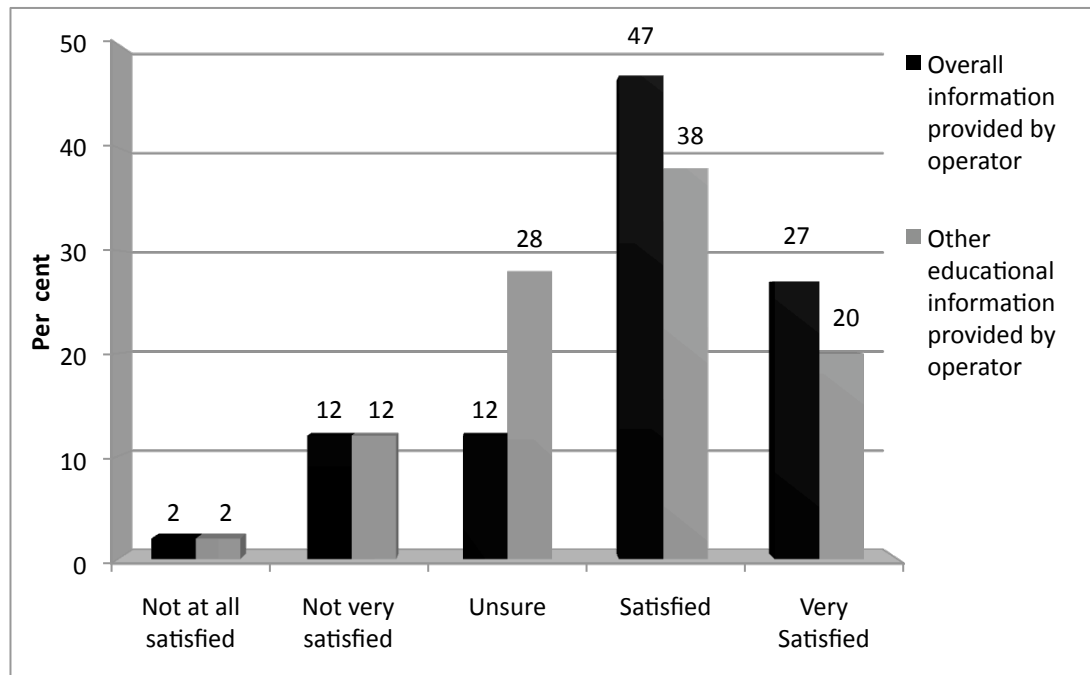
Table 6.5: Mean scores of satisfaction levels with educational information provided

Statement	<i>n</i>	Mean	Std deviation
Overall educational information provided by operator	372	3.8	1.02
Other educational information provided by operator	363	3.6	1.00

Note: 1 = not at all satisfied; 2 = not very satisfied; 3 = unsure; 4 = satisfied; 5 = very satisfied

The frequency scores indicated that the majority of respondents were ‘satisfied’ or ‘very satisfied’ with both overall (74%) and other educational information provided by the operator (58%) (see Figure 6.2).

Figure 6.2: Frequency results of satisfaction with educational information provided



Note: percentages taken from the 380 responses received from the on-tour questionnaire

The majority of respondents within both groups of whether or not shark diving was the main purpose of the trip also stated they were ‘satisfied’ or ‘very satisfied’ with these two items. However, the percentage counts were higher among those who indicated that shark diving was the main purpose of their trip; 90% (compared to 71%) for overall educational information provided by the operator, and 70% (compared to 56%) for other

educational information provided by the operator. More members of the group who stated that shark diving was not the main purpose of their trip also indicated being unsure for each the two items, which again possibly shows their higher levels of uncertainty with what to expect from the experience.

Many respondents commented that through their experience they gained “*More of an understanding of sharks.*” Yet, despite these results, a general recurring statement found in open-ended sections throughout the on-tour questionnaire was the desire to have had “*More of an educational aspect.*” The majority of respondents may have indicated feeling satisfied with the educational information provided by the operator due mainly to the fact that shark diving is an interactive and stimulating activity which influences the affective domain, and thus felt they came away with more educational information than actually existed. In Dobson’s (2007) study, he also found that divers’ attitudes towards sharks were impacted in a positive manner, despite the fact that the educational content on their trip was poor. As MacCarthy et al. (2006) claim, in their study on customer satisfaction and scuba diving, when divers have a good experience they appear willing to overlook some aspects that fall below what is considered normal standards.

Divers may have felt that just by being in the sharks’ natural environment they were being educated. As Dearden et al. (2007) claim, direct experience is often the best teacher. In a study on visitors to rainforests, Hill, Woodland, and Gough (2007) argue that besides being pleased with their affective experience, visitors also want interpretive information. Lück (2003a; 2003b) found that participants of dolphin-watching tours desired more cognitive stimulation through interpretive information, as did many respondents in this study. Thus, as Tilden (2007) argues, a way operators can stimulate visitors is through provocation.

A one-way ANOVA was performed on the two items regarding satisfaction with educational information, and a post hoc Tukey test revealed that a significant difference existed between them ( $F = 84.4$ , significance = 0.00). The fact that other educational information provided by the operator was rated lower than overall information provided may suggest that open-ended comments indicating a desire for more educational information may have been targeted more at this ‘other’ factor than at the overall educational information provided by the operator. As two respondents stated, they would have liked “*More educational info, perhaps take-home info*”, and “*More educational material offered pre-dive*.” Other studies conducted in the area of scuba diving also concur that divers desire more educational information from the operators (Dearden et al., 2007; Musa et al., 2006; Musa, 2002). By increasing both their on- and off-tour education and interpretation efforts, operators may further their clients’ general knowledge and enhance their overall experience, thus positively impacting both their cognitive and affective domains, and potentially longer term behaviours (Orams, 1996b).

Hennes and Chabay (2001) argue that operators need to stimulate visitors to move from a ‘looking’ to more a ‘learning’ environment. Educational information (e.g. pamphlets, shark identification booklet and posters) was available at the dive sites in Pacific Harbour but divers were not effectively being made aware of these resources — when asked to give suggestions on how to make the delivery of educational information as effective as possible, many respondents had stated that dive operators could provide “*Leaflets with pictures to identify sharks*”, “*Pamphlets*”, “*Brochures*”, and “*Posters*”. By simply drawing their clients’ attention to this available information, operators would better stimulate divers’ cognitive domain as well as their affective domain and as such

provide an even deeper and richer shark diving experience than the one already indicated by many of the respondents in this study.

The managers of the three dive operations were asked what they felt about their own educational efforts. All three believed they were effectively educating their clients, although two managers indicated the need for improvement in this area. One of these two managers stated that the shy and reclusive nature of their Fijian staff means that they find it difficult and intimidating to stand in front of and address their clients, and this is one of the main obstacles to communicating effective educational information to the tourists. Regarding ways to improve their educational component, this manager said:

*“I definitely think that the areas are, besides our staff obviously becoming more forthright, which I don’t actually know how I’m ever going to come to terms with that, I believe we could put more materials on the boat. I believe that we could put more information even on our website.”*

The other manager who felt their educational component needed improvement said:

*“We’ve also had some feedback that there wasn’t enough being given on the boat, you know and that’s something that we’ll look to address and see what we can maybe do to enlighten people a little bit more whereby they’ll come back to the shop and pick up something, maybe, you know, having stuff on the boat is not necessarily ideal because paper just disintegrates with water. But, you know, we’ll look at ways whereby we can, we can improve on that.”*

Survey respondents were asked to list three things they felt an operator could do to make the delivery of educational information to the tourist as effective as possible. The

purpose of this question was to gain deeper insights into what types of educational tools or resources respondents would like provided to them when on a shark diving trip. The 643 answers were analysed and those that were similar were combined into themes. The 39 themes were then quantified to ascertain counts and percentages. Only the five most frequently occurring themes are illustrated because the other 34 had much lower counts. The five most frequently occurring themes given by respondents as suggestions for how operators could make their delivery of educational information as effective as possible were: providing audiovisual tools (15.9%), making brochures/pamphlets available (13.6%), giving a pre- or post-dive lecture (10.9%), having identification photos of sharks on and off the boat (8.8%) and describing the sharks that have been or will be seen (7.1%). These results are similar to some of the features of interpretation likely to encourage mindfulness in Woods and Moscardo's (2003) model, for example, the use of multi-sensory media, clear structure and content, which make connections to visitors. These results also show that there is a desire for divers to be impacted cognitively, through the provisioning of information from a variety of sources, such as lectures, brochures and identification photos, which Orams (1996b) describes as an important stage in his model.

Some of the suggestions made by the respondents, for making the delivery of educational information as effective as possible, are already in place: for example, there are brochures and photo identification booklets of sharks on board the boats. However, these resources are not being utilised effectively because divers are not being made aware of their availability. Other suggestions, such as talking more about sharks to be encountered, pre- or post-dive lectures, and providing more audiovisuals, are not currently in place. The results show that many respondents are interested in an educational shark diving experience, which suggests that there exists the potential for

operators to make more of an impact on the diver's cognitive domain. Many of the suggestions made by the respondents would be easy for operators to adopt, and as Orams (1997, 1996b) argues, through education and interpretation there exists the potential to increase visitor enjoyment and understanding even further, and in turn possibly prompt more environmentally responsible behaviour. Moreover, as Medio et al. (1997) found, in their study on the effect of briefings on damage to coral reefs by divers, scuba diver behaviour can be influenced by the use of educational tools.

Respondents were asked to rate on a five-point Likert-type scale, from 'very important' (5) to 'not at all important' (1), how important they felt learning was to them on any trip they would take (i.e. not only shark diving or wildlife tourism trips). The mean score for this question (4.5) indicates that learning is an important aspect. These results are consistent with previous ones showing how important learning is to many of the respondents of this study; for example, responses to open-ended questions have indicated the importance of having opportunities to learn new things, (especially "*about sharks*"), and a frequently recurring motivating factor while on a shark diving trip was '*to learn/its educational component*'.

The high importance placed on learning by many of the respondents in this study is also consistent with other studies, conducted over the past twenty years, that argue that learning is a significant motivating factor for many tourists in leisure activities and is central to the tourist experience (e.g. Ballantyne et al., 2009; Ballantyne et al., 2011; Packer, 2006; Roggenbuck et al., 1990; Zeppel, 2008). Like the results in the current study, whereby respondents indicated a desire to learn more about sharks, Muloin (1998) found that visitors to an Australian whale-watching operation rated learning about whales highly. Moscardo (1998b) reported findings that indicate tourists' desire to

learn on a trip: in two separate surveys asking respondents to list the five most important travel motivations for visiting North and far North Queensland, Australia, the motive to learn new things or increase knowledge was rated highly. Tschapka, 2006 and Bennett, 2002 found that divers indicated learning as being one of the top motivators in their decision to take a scuba diving trip.

Although the results indicate that learning is an important aspect for many of the respondents in this study, Ballantyne, Packer, and Beckmann (1998) found in their study on tourists to Fraser Island, Australia, that learning about the island was rated low by visitors. Ballantyne et al. (2007) found that in captive wildlife tourism environments (zoos and aquaria), visitors are not interested in learning either about the animals or about conservation issues. However, these two examples of learning being less important to tourists are in the minority.

As a follow-up to the question of importance of learning on any trip, respondents were asked to list anything they felt they had learned during their shark dive. The 322 responses were analysed and those that were similar combined into themes. Thirty-nine themes emerged, and these were quantified to ascertain counts and percentages. The results for the most frequently occurring themes as to what respondents indicated they had learned during their shark diving trip were: shark behaviour (33.2%), shark physiology/biology (16.8%), sharks are not dangerous/scary (12.4%), sharks do not eat humans (3.4%), sharks are amazing (3.1%), and nothing (3.1%). Other themes, such as a greater respect for sharks, the intelligence of sharks and the importance of sharks to Fijian culture/overall ecosystem, occurred at a lower rate.

The most frequently occurring themes indicate that many respondents felt they had had a very shark-oriented learning experience, although little mention was made that this information was provided to them by the actual operators. The fact that they indicated learning a lot about sharks, with little of this being provided by operators, suggests that their learning was due more to their experience, the close contact with and exposure to sharks. Dobson (2008) argues that wildlife tourism is a potential agent for conservation due to its ability to raise awareness and educate tourists. He feels that exposing tourists to sharks can potentially make significant contributions towards shark conservation. Zeppel (2008) contends that close contact with animals, along with marine wildlife interpretation, is likely to produce positive changes in visitors' attitudes.

Exposure to sharks is an important aspect of the shark diving experience (Dobson, 2007). Many respondents commented that the most valuable aspect of their trip was "*Being close to sharks.*" This was confirmed by observations made by the researcher of divers' reactions and facial expressions immediately following their dive. As one diver stated, "*Wow, it was awesome seeing all those sharks so close.*" However, respondents also made comments such as "*I didn't learn much besides what I observed*", and this suggests that operators could play a more pivotal role in the delivery of information during the trip. As Orams (1996b) outlines in his model, it is not enough only to impact the affective domain, the cognitive domain must be stimulated as well. Dobson (2007) also found in his study that respondents indicated that their trip was not very educational, that they had not learned much and were given very little information about sharks from the operator. Ensuring more divers are being reached with educational information, in particular that which is shark-based, could translate into enhanced experiences for their clients as well as possible changes in divers' attitudes and

behaviours (Medio et al., 1997; Uyarra & Côté, 2007), which could potentially result in them taking more actions for the sake of shark conservation.

Orams (1996b) as well as Ballantyne and Packer (2005) argue that a key focus for operators of any wildlife encounter in the natural environment should be to facilitate and support the development of pro-conservation attitudes, knowledge and ultimately behaviour changes among tourists. Respondents were asked to indicate ('yes', 'no', or 'unsure', and to explain) if they felt that what they had learned on their trip would influence any potential change in their behaviours once back at home (e.g. doing more for sharks or for the environment in general). The biggest group of respondents (43.4%) indicated that on-site learning would influence a behaviour change once back home. As one respondent commented, they would "*Educate other people about respecting sharks and their value and not thinking of them as being bad.*" Another respondent said, "*I will be more alert and concerned with our natural environment.*" These results help to further affirm the notion that learning, for many of the respondents in this study, is an important aspect during a shark diving experience.

Nearly as many respondents indicated (35.3%) that on-site learning would not influence their behaviour, while 18.2% said they were unsure and 3.2% did not reply to the question. These results are similar to the ones given by the group who said shark diving was not the main purpose of their trip; 42% said that on-site learning would influence a change in their behaviour, 38% said it would not, and 20% were unsure. Of those who said shark diving was the main purpose of their trip, more respondents indicated that on-site learning would influence their behaviour once back home (62%), while 27% said no and 11% said unsure. Since shark diving was the main purpose of the trip for these individuals', they may have felt a closer connection to the experience and as such

reported feeling more impacted by what they learned on-site and thus more motivated to change behaviours once back home. Conversely, many may have felt merely compelled to provide such positive answers because they indicated they were there primarily to dive with sharks. As Dann (1981) points out, tourists may not always wish or be able to express real travel motives. He also argues that it is difficult to determine tourists' true motivations.

Respondents were asked to explain further their answers concerning whether or not anything learned on their shark diving trip would change their pro-conservation behaviour once back home. The 230 responses provided ranged from one word answers to full sentences. For example, one respondent said that what was learned on the trip *"Will make me even more determined to support the protection of sharks and marine life in general."* Another two respondents stated that what they learned would prompt them to *"Want to do more shark research"* and *"Be confident about talking about my experience here and look into protecting sharks."* Many other respondents provided answers such as they have *"A greater respect for and less fear of sharks"*, would *"Inform others about their shark diving experience"*, and would *"Do more for the environment in general."* These results all help to reaffirm the many respondents' good-willed intentions for the sake of sharks and the environment as well as the impact of the shark diving experience.

Respondents who answered 'no' to the question of whether anything learned during the shark dive would influence a change in their pro-conservation behaviour back home also provided a variety of open-ended explanations. Their responses included: *"Did not learn anything new"*, *"Already behave in an environmentally friendly way"*, *"Have always had a love for nature"* and that *"Although learning did take place on-tour it will*

*not cause a change in my behaviour.*” In addition to providing more educational information, a way for operators to stimulate its audience towards a desire to widen its horizon of interest and knowledge, and in so doing increase the chances of behaviour changes, is through provocation (Tilden, 2007). Operators could provoke more divers to change their behaviours by communicating to them some of the important issues relating to sharks.

## **6.4 Summary**

This chapter presented results and discussions dealing exclusively with the on-tour component of the study, i.e. the surveying period immediately following the shark diving experience, as well as observations and operator interviews. Particular attention was paid to the respondents’ attitudes and feelings about the overall on-tour experience and towards the concept of education and interpretation provided to them while on their trip. Respondents in this study indicated being highly satisfied with their overall shark diving experience and felt that factors such as a greater general knowledge/awareness of sharks, being able to see sharks close up, a good time/cool experience, and a greater respect/appreciation for sharks/marine life were the most valuable aspects gained from their shark diving trip. Many respondents indicated being satisfied with the educational information provided to them and that the operators were effective at increasing awareness about shark and environmental issues as well as in their overall learning, although many did indicate desiring more educational information from the operators.

Respondents provided suggestions for the operators on how to improve or make the delivery of educational information as effective as possible. These suggestions included providing resources and tools such as audiovisuals and brochures or pamphlets, giving pre- or post-dive lectures, having identification photos of sharks available on and off the

boat, and describing the sharks that have been or might be seen. A large group of respondents felt that learning was an important factor on their shark diving trip, as it is on any other, and they indicated that what they learned on-site would influence a change in their pro-conservation behaviour once back home. Many respondents indicated being likely to perform a variety of future actions such as promoting shark diving to others and taking opportunities to talk more positively about sharks, but fewer indicated that they were likely to donate money or join a conservation group.

The major themes emerging in this chapter are centred on the importance respondents place on learning and on receiving effective educational information from the operators, the positive impact they felt by being exposed to sharks in their natural environment, and the great deal of respect and appreciation they show towards sharks. The results in this chapter show that the majority of respondents, like shark divers in Dobson's (2007) study, appear to be in search of much more than simply a fun and entertaining or adrenaline filled recreational experience.

## CHAPTER 7 — After the shark diving experience

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### 7.1 Introduction

This chapter presents results, and discussions, taken from the follow-up questionnaire as well as various relevant comparative analyses to the on-tour questionnaire. The results are based on a variety of univariate, paired-samples *t*-tests, and open-ended analyses chosen to examine various post-tour features. The main areas considered are the respondents' post-tour attitudes and feelings about their overall shark diving experience, sharks and shark divers, and the concept of education and interpretation.

### 7.2 Post-tour attitudes and feelings about the shark diving experience

To obtain the respondents' opinions, attitudes and feelings about the impact of their shark diving experience three months or longer after their dive, they were asked to rate three different statements. The first statement asked to what extent had their environmentally friendly behaviour changed; the second asked to what extent had their attitudes towards sharks changed; and the third asked to what extent any on-tour educational information they received had a lasting impact on them since they returned home from their shark diving trip. Respondents indicated that there was some lasting impact from the educational information they received while on their shark diving trip (3.8), there was somewhat of a change in their opinions of sharks (3.7), but that there was little change in their overall environmental behaviour (2.9) since being back from their trip (see Table 7.1).

Table 7.1: Extent of the impact from the shark diving trip

Statement	<i>n</i>	Mean	Std deviation
Lasting impact of educational information	125	3.8	1.18
Change in opinion of sharks	127	3.7	1.28
Change in environmental behaviour	126	2.9	1.30

Note: 1 = not at all; 2 = very little; 3 = little; 4 = some; 5 = a lot

The results of the first two statements show that the shark diving experience did, albeit to a small extent, have some lasting impact. The less-than-convincing result for the impact of on-tour educational information suggests that respondents still desired more from the operators. As two respondents commented: *“They really didn’t talk to us too much on the trip, I wish they had said more”* and *“An educational opportunity was lost.”* These two comments also continue to reaffirm the theme that respondents wanted more educational information on their trip, as many indicated even in the on-tour questionnaire. In a pre- and post- same day survey conducted by Dearden et al. (2007), to measure scuba divers’ perceptions of diving impacts on coral reefs, they found that respondents indicated that the impact from education provided to divers decreased after their diving experience. The authors argue that this result suggests the need for greater investment in diver education on the part of the dive operator.

Respondents indicating that there were some changes in their opinions of sharks suggests that the shark diving experience had a positive impact on divers. Many of the respondents had already indicated positive opinions towards as well as a strong desire for close encounters with sharks on the on-tour questionnaire, and so this post-tour result of an increasingly positive opinion of sharks may be attributed to their having been able to see sharks closely in their natural environment. As one respondent of the follow-up survey stated, one of the most valuable things gained on the trip was *“Having the opportunity to get up close to these amazing creatures.”* Another respondent said

that the shark diving experience prompted “*A change of opinion of sharks.*” These results further suggest that non-captive wildlife tourism settings, such as shark diving, have considerable potential to enhance visitors’ knowledge and appreciation of animals, which may otherwise only be encountered through media such as books, film and television (Ballantyne et al., 2007).

Respondents indicated that there was little change in their environmental behaviours since being back from their shark diving trip. This could be due to the short amount of time between completing their trip and filling out the follow-up survey. This result could also be due to respondents feeling that they already act in an environmentally friendly manner and thus the shark diving experience had little impact in that area. As one respondent stated, “*I always try to act in an environmentally friendly way ... even before this trip.*” Another respondent said, “*We are already environmentalists and do all we can.*” Among these results, it is encouraging that respondents indicated there being somewhat of a lasting impact from educational information; however, it is also discouraging, from Orams’ (1996b) perspective, that they indicated there being little change in their environmental behaviours. As Orams (1996b) argues, if interpretation is unable to change behaviour it is of questionable benefit.

When asked if they felt the same about their overall experience (e.g. emotions and satisfactions) three months or more after the dive as they did immediately following the shark dive, a large group of respondents (83.6%) said ‘yes’, whereas only 11.7% said ‘no’; 4.7% did not reply. This result is consistent with the feelings of high satisfaction with the overall shark diving experience found in the on-tour questionnaire. This finding also shows that, on an affective level, respondents were profoundly impacted by their shark diving experience. One respondent commented that “*In 40 years of diving I have*

*seen many sharks, whales, manta rays etc, but the up-close nature and adrenalin rush of these dives exceeded my expectations.*” Another respondent said of the dive, *“It was the most exciting thing I have ever done or dreamed of doing. The chance to be so close to a shark is quite an experience and to be able to touch them (if that doesn’t harm them) was very exhilarating.”* These two quotations demonstrate that even months after the dive, emotions and feelings, components of the affective domain which Orams (1996b) argues is important to the wildlife tourism experience, were still quite high.

Respondents were asked to further explain their post-tour feelings about the shark diving trip. Their 101 raw answers were analysed and those that were similar were combined into themes. The 19 themes were then quantified to ascertain counts and percentages. Only the results from the most frequently occurring themes are presented, because the other 14 themes had low counts. The most frequently occurring themes were: unforgettable experience (60.4%), want to do it again (6.9%), would have liked more information/interaction with guides (5%), changed perceptions of sharks/marine environment (4%), nothing has changed (4%) and more sceptical about shark-feeding (4%). The two that occurred most often comprise almost three-quarters of the responses and are further demonstrated by the following comments about the shark diving experience: *“Still burnt into my mind. I don’t think I will ever forget it”* and *“Still think it was an amazing experience and would love to do it again.”* Overall, these results show that the positive impact of the shark diving experience extended well beyond the few hours on the actual day of the trip. The two quotations demonstrate that the impact to divers’ affective domain is still strong even months after the trip.

Among these results, however, there are those, albeit to a lesser extent, that suggest the shark dive had a negative or no impact on some respondents. This potentially stems

from a desire to be cognitively stimulated by more educational information, which is an issue that has been raised in previous results, both within the on-tour and follow-up questionnaires. This implies that operators could focus more on enhancing the educational information they provide to their clients. As one follow-up respondent mentioned, *“It was an amazing experience, however I feel that they lost a good opportunity to promote conservation.”* Another two respondents said, *“I would have liked more interaction with the guides as teachers”* and *“Still very satisfied with the dives itself, the experience. But the learning part was rather bad.”* These comments show that from the perspective of Orams’ Interpretation Model, the shark diving experience positively impacts the diver’s affective domain, although the cognitive domain appears to be much less stimulated. This could be a concern for operators because as Orams (1996b) argues, through his model, for interpretational efforts to be most effective they need to stimulate tourists’ affective and cognitive domains simultaneously.

That respondents indicated being more sceptical since the dive about the feeding of sharks shows the controversial nature of this practice (Brunnschweiler & Baensch, 2011). One respondent stated that they are *“Much more sceptical now regarding the shark-feeding practice for shark tourism.”* The feeding or chumming (attracting animals with a mash bait) of sharks to encourage sightings is an extremely controversial activity which can have significant consequences for the target species and is an issue that has generated much debate (Cater, 2008; Dobson, 2006, 2008). Despite these negative sentiments, the results, especially regarding the trip being an unforgettable experience, for the most part reaffirm the notion that the shark diving experience positively impacted the respondents of this study. Findings in Dearden et al.’s (2007) study also show the positive value that the diving experience has in changing diver perceptions.

Almost two-thirds (61.7%) of the respondents to the follow-up questionnaire indicated that they were planning on taking another shark diving trip in the next two years, whereas 34.4% said they had no plans to do so and 3.9% did not reply to the question. These results were similar regardless of any previous shark diving experience: 69% of the respondents who said they had been shark diving prior to their experience in Beqa Lagoon or with O3, and 60% of those who said they had never been, indicated that they are planning on taking another shark diving trip in the near future. As two experienced divers commented, *“It was absolutely amazing and I’m sure I will do it again”*, and *“I am thrilled I did it, and I think I would like to do it again, even more than the first time I did it.”* Two inexperienced divers said, *“I really loved it and would love to experience it again”*, and *“The dive was awesome and I would definitely do it again.”* These results, however, are contrary to findings in Dobson’s (2007) study in which he found that experienced shark divers, those who had repeatedly dived with sharks, appeared to be more intrinsically motivated to continue participating in the activity than did less experienced shark divers.

Respondents were asked if they would return to the same location, Beqa Lagoon or with O3, for another shark diving trip and two-thirds (68.8%) said they would, while 29.7% said they would not and 1.6% did not answer the question. These results are also similar regardless of previous shark diving experience: 74% of the respondents who said they had been shark diving previous to their experience in Beqa Lagoon or with O3 and 67% of those who said they had never been indicated that they would return to the same location in Fiji for another shark diving trip. As an experienced diver commented, they plan on returning, *“Back to Beqa Lagoon to re-witness the shark feed”*, and another one said, *“After my shark dive in Beqa, my motivations are even better for doing it again.”* An inexperienced diver stated, *“The whole experience was great and I would definitely*

*travel back to Fiji just to do it again.*” The impact of the shark diving trip appears to have been strong enough to inspire respondents, regardless of their shark diving experience, to pursue the activity again and to do so by even returning to Beqa Lagoon or for another trip with O3. These findings, regarding intentions of taking more shark diving trips in the future, are encouraging, especially from the perspective of the dive operator. These results reaffirm the positive impact that the dive had on the respondents and suggest that motivations to take another shark diving trip are strongly linked to the diver’s affective domain being positively stimulated.

Respondents were asked to list up to three things that motivate them to choose shark diving as an activity. Their 307 raw answers were coded into 26 different motivating factors, which were then quantified to obtain counts and percentages. The five most frequently occurring motivating factors were: thrill (15.3%), experience (13.7%), interest/curiosity (10.4%), education/learning (10.1%) and sharks (9.5%). Other motivational factors indicated included: wildlife (7.5%), fun (5.5%), adventure (3.9%), adrenaline (3.9%) and opportunity (2.9%). Many of these results, for example experience, interest/curiosity, thrill, education/learning and sharks, are similar to the ‘top ten’ given in the on-tour questionnaire. They are also among the top motivational factors for scuba divers in Tschapka’s (2006), Bennett’s (2002) and Ditton et al.’s (2002) studies. The fact that thrill, adventure and adrenaline were mentioned among the top ten answers also shows that an adventurous experience is viewed as an important aspect of shark diving (Dobson, 2007).

However, as Dobson (2007) also found, although important, adventure and adrenaline rush are not the main motivating factors among all shark divers. The two most important findings, in this study, are that among all of the motivational factors

mentioned, education/learning and sharks are quite important to shark divers. One respondent summed it up adequately by stating that the most valuable thing gained on their trip was “*Education regarding sharks.*” The concept of education/learning and the desire to have close encounters with sharks in their natural environment is a prevalent theme which has been recurring throughout the study. Respondents appear to be highly motivated to have a rich experience entailing learning about and being exposed to sharks in their natural environment. As one respondent commented, “[Education/learning on a shark diving trip is] *very important because it makes you appreciate the experience that much more. It also gives insight into shark habitat and how vital they are to the ecosystem.*” This sustained desire to learn about and have up-close encounters with sharks shows the potential that operators have to tap into divers’ affective and cognitive domains, as outlined in Orams’ (1996b) model. Designing interpretive efforts around knowing this information, could thus lead to tourists progressing through to the subsequent stages in Orams’ model. Moreover, the desire for close encounters with sharks is also consistent with certain features of the experience likely to encourage mindfulness outlined in Woods and Moscardo’s (2003) model. In their model they claim that features of the wildlife tourism experience include interacting with and close proximity to animals.

When asked to look back on and rate their on-tour shark diving experience (from 5 = ‘very good’ to 1 = ‘not good at all’), nearly all (95%) of the respondents indicated that they still felt it was a ‘good’ or ‘very good’ experience (mean score of 4.5). As two respondents said, “*The experience is easily recalled to the finest detail. The satisfaction is the same or at least similar*” and “*Still buzzing about the whole experience. We will be back. We look at photos and videos almost on a daily basis; they are on the desktop of the computer for easy access.*” These results are consistent with previous ones

indicating that respondents were positively impacted by and highly satisfied with their on-tour shark diving experience. These findings again demonstrate the lasting impact of the shark diving experience. As one diver commented, *“Still to this day the best overall dive I have ever done in over 600 dives.”* These results, especially the quotations, lend support to the fact that shark diving is an activity which positively impacts the divers’ affective domain.

In the on-tour questionnaire respondents were asked to list the most valuable thing they felt they gained from their shark diving experience. They were then asked this same question in the follow-up questionnaire. The 112 raw answers were analysed and those that were similar in subject matter were combined into themes. Twenty themes emerged, and these were then quantified to ascertain counts and percentages. The five most frequently occurring themes regarding the most valuable gains from the shark diving experience were: a greater general knowledge/awareness of sharks (28.6%), being able to see sharks up close (14.3%), a greater respect/appreciation for sharks and marine life (13.4%), a good time/cool experience (8.9%), and a reduced fear of sharks (6.3%). These ‘top five’ responses are identical to the most frequently occurring responses given in the on-tour questionnaire. These results show consistencies with features of both the wildlife tourism experience and the tourists, likely to encourage mindfulness, in Woods and Moscardo’s (2003) model, particularly close proximity to sharks, high interest in viewing wildlife, and excitement or emotion.

These results suggest that even three months or more after the shark diving experience, respondents still value the same aspects about their experience that they had immediately following their shark diving trip. As one respondent commented, *“I found the experience very satisfying and positive then and my views haven’t changed.”* These

results further reaffirm that the experience had a positive impact on the respondents and the aspects most valuable to them are much more significant than just having fun and being entertained. One respondent demonstrated the significance of their shark diving trip by stating, *“I realised since returning from Fiji that my experience has affected me more than I realised at the time. It has changed my perception of sharks and has made me think differently toward marine conservation and the protection of the species that inhabit the ocean.”* This last quotation particularly shows the affective impact of the shark diving experience. The respondent demonstrates a willingness to reconsider the issues of marine and shark conservation. From Orams’ (1996b) perspective, this is an encouraging finding because, whether or not this respondent’s attitude was shaped by any interpretation provided, it shows that there is potential for operators to tap into divers’ affective and cognitive domains. This subsequently could lead divers to progress further along Orams’ model and ultimately to conservational actions being taken.

Although the actual words ‘learning’ or ‘education’ were not mentioned in the five most frequently occurring themes about the most valuable aspects gained, respondents did indicate gaining a greater knowledge and awareness of sharks, a greater respect and appreciation for sharks and marine life, and a reduced fear of sharks. These results imply that an element of learning and education was indeed part of their overall experience. The valuable gain most frequently mentioned is a greater knowledge and awareness of sharks and this would suggest that respondents felt that the educational information they were given, or at least perceived to have been given, was valuable; this is despite comments indicating a desire for more education/interpretation from the operator. As one respondent stated, *“I think the experience of diving with a tiger shark has become more intense than it was at the time. This is because I have done further research and realize the awesome power and ferocity of this animal.”* Another

respondent said, *“I extremely enjoyed the diving experience and I enjoyed learning more about sharks that I had previously not known.”*

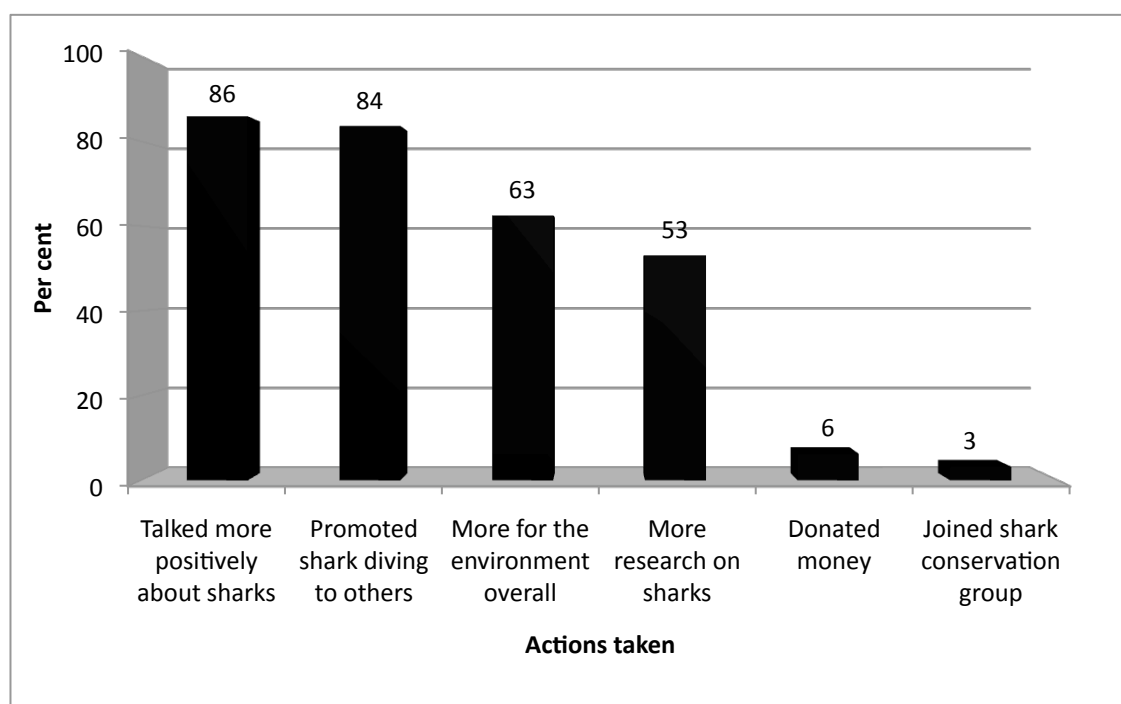
These results suggest that being in the shark’s environment, which was listed as the second most valuable gain by respondents, may have had enough of an impact on its own to raise awareness and provide greater general knowledge about sharks. Being exposed to sharks may have increased respondents’ respect and appreciation for them as well as helping to reduce any fears of them. As one respondent commented, *“I am not as fearful of sharks as I used to be.”* Another respondent said, *“Any small bit of fear of sharks that I had before is almost entirely gone though I really wasn’t much afraid of them to begin with. And I can tell people about it and convince them that they aren’t dangerous.”* Dobson et al. (2005) and Dobson (2007) claim that exposure to sharks in their natural environment is an effective way of increasing awareness and knowledge about sharks and thus a potential way of enhancing tourists’ attitudes towards them. The results in this section have helped to reaffirm further that respondents highly value learning about and being exposed to sharks and that they show a great deal of appreciation and respect for these animals. Moreover, results in this section have also shown consistencies with various elements in both Orams’ (1996b) and Woods and Moscardo’s (2003) models.

Evaluating on-tour and longer-term conservation intentions and behaviours of visitors to marine wildlife tourism environments is an area within tourism research which has been under-investigated (Lee & Moscardo, 2005; Moscardo, 2007; Zeppel, 2008). Schänzel and McIntosh (2000) claim that more research that follows up intentions needs to be conducted in this area because intentions alone do not necessarily result in actual behaviour change. It has also been argued that human behaviour is difficult to predict

and general dispositions or attitudes tend to be poor predictors of behaviour in specific situations (Cottrell, 2003; Diamantopoulos et al., 2003; Ajzen, 1991). One of the intentions of the current study is to provide more insight into the area of on-tour intentions and post-tour behaviours.

Respondents were asked in the on-tour questionnaire to indicate the likelihood of performing six future actions. Follow-up respondents were then asked to indicate whether or not they had actually performed any of these six actions. A large group of respondents said they talked more positively about sharks (86%) and promoted shark diving to others (84%). Fewer, but still more than half, indicated doing more for the environment overall (63%) and that they had done some research on sharks (53%). A considerably smaller proportion of respondents said they had donated money to the conservation of sharks (6%) and had joined a shark conservation group (3%) (see Figure 7.1).

Figure 7.1: Actions indicated being taken since the shark diving trip



These results are consistent with the respondents' initially stated intentions. In the on-tour questionnaire many respondents said they would be likely to talk more positively about sharks (mean score of 4.3), promote shark diving to others (4.4), do more for the environment overall (4.1) and do more research on sharks (4.2) but that they would be less likely to donate money (3.6) and join a conservation group (2.9).

When analysing the results for actions actually taken in comparison to shark diving being the main purpose of the trip, overall they are consistent with the ones in this section. However, those who stated that shark diving was the main purpose of their trip indicated, in the on-tour questionnaire, being more likely to perform each of the six items. The majority of respondents from both groups said that they talked more positively about sharks, promoted shark diving to others, did more for the environment overall and did more research on sharks and very few indicated that they donated money or joined a conservation group. Slightly more of those who said that shark diving was the main purpose of their trip indicated doing more research on sharks and more for the environment overall. These results suggest that those individuals who travelled to Fiji primarily to dive with sharks felt a closer connection to the experience, which subsequently led them to indicate an increased likelihood of and then actually performing certain actions. However, the fact that those divers who were in Fiji with the main purpose of shark diving, as opposed to those who were not, only slightly indicated performing more actions shows that, for the most part, the shark diving experience impacted most divers equally.

Stamation et al. (2007) conducted an on-tour and post-tour study on whale watchers and found that a large proportion of respondents said they promoted whale watching to others, whereas few said they actually donated money or were actively involved in

helping an environmental group. Howard (2000) surveyed visitors before and after their visit to Mon Repos Conservation Park's turtle-watching programme and found that many respondents said they were inspired by their trip and so had taken various actions such as teaching people about the plight of Mon Repos turtles or removing litter from beaches. Howard (2000) also found that interpretation at Mon Repos appears to be achieving its objectives because it introduces basic turtle biology and stimulates visitors to think about conservation.

According to previous results in this study, there appears to be some deficiencies in interpretation efforts at the shark diving locations. Previous results indicate that there is potential to tap into divers' affective and cognitive domains. Shark dive operators could thus increase their interpretational efforts, even if just slightly, in influencing divers' pro-conservation attitudes in order to provoke them to potentially change their long-term behaviours (Orams, 1996b; Tilden, 2007). As Medio et al. (1997) found, even the slightest amount of educational information within a dive briefing is substantial enough to influence diver behaviour. Uyarra and Côté (2007) also argue that pre-dive environmental briefings have been shown to be effective in influencing behaviour. Barker and Roberts (2004), however, found that although simple interpretive messages are effective, on their own they may not be enough to influence behaviour. They argue that operators could be more proactive in educating divers by having their dive guides take certain measures to reduce negative impacts, such as underwater intervention and leading by example.

Some respondents indicated that they did not feel totally convinced about the educational information they received and indicated desiring more, as did respondents in other scuba diving studies as well (Musa et al., 2006; Musa, 2002). As one

respondent in this study commented *“The #1 area for improvement is enhancing the educational part of the trip. More structure, written materials, and making use of the travel time out to the dive site to communicate information about sharks would greatly enhance the experience.”* That a large proportion of the respondents had indicated that they had not donated money or joined a conservation group may be due to this lack of information being provided. Having had more educational information about the plight of sharks may have prompted more respondents to take these two actions. Cottrell (2003), for example, found that as environmental knowledge among recreational boaters increased so did their willingness to take pro-environmental action. By focusing on increasing visitors’ knowledge and awareness, through enhancing overall educational efforts, and as prescribed in Orams’ Interpretation Model, operators could potentially prompt changes in their clients’ future environmental behaviours, which according to Orams (1996b) should be the ultimate goal of interpretational efforts. As Tilden (2007) and Orams (1996b) contend, individuals must be provoked and convinced of the reasons why they need to change their behaviours, or given an incentive or motivation to change. Providing meaningful interpretive messages that divers can make a difference is key to encouraging them to think about changing their future behaviours (Orams, 1996b; Tilden, 2007).

As previous results have suggested, being exposed to sharks can have a positive impact on divers. Two respondents stated that the most valuable thing gained on their trip was *“Having seen these beautiful animals at close range”*, and *“The close hand experience we had diving with sharks, put them to the forefront of my mind.”* Another respondent indicated the extent of the shark diving’s impact by saying, *“The experience was fantastic so I want to tell all my friends.”* Although these comments suggest that the experience of shark diving has enough impact on its own, operators could also provide

their clients with more educational information, which may help even further to prompt future behaviour changes (Medio et al., 1997) while simultaneously enhancing the divers' overall experiences.

Respondents were asked to explain further their answers regarding what actions they had taken since returning home from their shark diving trip. The 149 responses were analysed and those that were similar were combined into themes. Nineteen themes emerged and these were then quantified to ascertain counts and percentages. The five most frequently occurring themes were: talked positively to others about sharks (29.5%), promoted the dive to others (23.5%), have done more for the environment (10.7%), have always acted environmentally friendly (9.4%), and watched documentaries on sharks (6.7%).

Within the raw open-ended answers, respondents commented about being inspired to take actions because of their shark diving experience. One respondent said, *"I have definitely promoted shark diving to others, the experience is priceless."* Another respondent said that because of their experience they had *"Spoken positively to others about my shark dive experience."* One particular comment encapsulates the impact of being exposed to sharks in their natural environment: *"I talked more positively because I've seen them close up, and that gives me a good feeling."* This comment reaffirms how the activity of shark diving strongly impacts the affective domain and is consistent with features of the experience and tourists likely to encourage mindfulness in Woods and Moscardo's (2003) model.

Stamation et al. (2007) argue in their whale-watching study that experiences, such as shark diving, with a simple structure containing few conservation themes can have a

positive impact upon tourists' behaviour; however, they add, it is also important to employ some form of interpretation which promotes awareness of conservation values and ultimately leads to positive behaviour changes (Orams, 1996b). As one respondent said about the shark dive, "*Would be a good educational opportunity — however, in Fiji very little education took place.*" Another respondent commented that interpretation "*Is a golden opportunity to advise divers of the real risk that the shark population is facing, what that means to the marine ecosystem and ultimately to our human lives.*" These comments again show that little educational information is being conveyed to divers yet they feel that the shark diving setting is one rich with opportunities to educate tourists about a variety of issues facing sharks and the whole marine ecosystem. These comments also show that divers are in search of more than just an affective experience, they desire a cognitive experience as well.

Howard (2000) believes that providing interpretation within wildlife tourism contexts is significant and that the affective component, shown to be positively impacted in this study, of interpretation programmes is important in encouraging long-term conservation behaviour. By providing more educational information, or by making divers aware of the material that is already on the boat and at the dive shop, the operators could enhance the divers' learning; this, in addition to the affective impact of the shark diving experience, would potentially have a more profound influence in prompting changes in their behaviour. As two respondents stated, "*Education and information is the only way to promote understanding of the ecosystems involved and why it is necessary to protect the sharks*", and "*It is such a unique opportunity to be able to see these many kinds of sharks in one spot: good education on behaviour of each is very useful.*" These two quotations have elements of features of the experience, interpretation, and tourists, likely to encourage mindfulness, contained in Woods and Moscardo's (2003) model. As

outlined in the model, the comments show divers' high interest and excitement in wildlife, the desire for interpretation to make a connection with them, and their desire to be in close proximity to sharks.

### 7.3 Post-tour feelings about sharks and shark divers

In the on-tour questionnaire, respondents were asked to provide up to three words they would use to describe a shark. To analyse how respondents felt about sharks after their shark diving experience they were asked the same question in the follow-up questionnaire. The 358 words were coded and then quantified, resulting in 85 different words. The five most frequently occurring words were: beautiful (9.8%), graceful (5.9%), awesome (5.6%), powerful and big (5.3%), and intelligent (4.7%). The next five words that occurred the most frequently were: amazing, endangered, necessary and predator, misunderstood, and interesting and majestic (see Table 7.2). Due to the enormous number of words given, and the lower counts of the other words, only the ten most frequently cited have been presented.

Table 7.2: Words used to describe sharks

<b>Word – Follow-up</b>	<b>Count</b>	<b>%</b>	<b>Word – On-tour</b>	<b>Count</b>	<b>%</b>
Beautiful	35	9.8	Big	87	8.3
Graceful	21	5.9	Teeth	72	6.9
Awesome	20	5.6	Beautiful	56	5.3
Powerful	19	5.3	Scary	54	5.2
Big	19	5.3	Dangerous	53	5.1
Intelligent	17	4.7	Predator	44	4.2
Amazing	15	4.2	Powerful	42	4.0
Endangered	14	3.9	Graceful	39	3.7
Necessary	11	3.1	Awesome	33	3.1
Predator	11	3.1	Sleek	24	2.3
Misunderstood	10	2.8			
Interesting	8	2.2			
Majestic	8	2.2			

**Note:** these are the ten most frequently occurring words of the 358 provided in the Follow-up Questionnaire and 1048 provided in the On-tour Questionnaire.

Some of the most frequently occurring words from the follow-up questionnaire are similar to ones returned in the on-tour questionnaire (i.e. beautiful, powerful, graceful and awesome) and to ones in Dobson's (2007) study. The follow-up questionnaire did not contain high frequency words with negative connotations (e.g. dangerous and scary), unlike the on-tour questionnaire. These results suggest that a positive shift in respondents' attitudes towards sharks had occurred during the three or more months after their shark diving experience. After having had more time to reflect on their trip, respondents may have further realised the positive impact of their experience and thus gained an even greater level of appreciation and respect for sharks, as a variety of other results in this study have already shown. One respondent commented that the most valuable thing gained on their trip was, "*Even more respect for them [sharks] than I already had before the dive.*"

Respondents' overall positive perceptions of sharks, as shown throughout the follow-up questionnaire, appears to reaffirm the notion that being exposed to sharks in their natural environment is an effective way of changing or enhancing attitudes (Dearden et al., 2007; Dobson, 2007). As Ballantyne et al. (2007) state, direct contact with an animal is more effective in changing visitors' attitudes than merely showing them a photograph of or providing information about that animal. Respondents' positive perceptions of sharks, however, could also be simply attributed to the fact that the majority of them who chose to participate in the follow-up questionnaire already viewed sharks in a favourable light. As one respondent commented, "*I did not change my mind during this shark-feeding dive as my attitudes were very positive before.*"

Respondents were asked in both questionnaires whether or not they felt that individuals who dive with sharks are unique or different to other wildlife-viewing tourists. Almost

two-thirds (64.1%) of those who responded to the follow-up questionnaire felt that those who dive with sharks are unique or different from other wildlife tourists, while 33.6% did not perceive shark divers as any different and 2.3% did not indicate either way. This positive response is slightly higher than that scored in the earlier questionnaire, where 59.5% said they felt unique. The slight increase in those who indicated that they viewed themselves as different may suggest that after having had more time to reflect on their experience, respondents realised the uniqueness of the activity and of themselves as shark diving tourists. As one respondent stated, *“A shark dive is not like other ‘wildlife viewing/ nature based’ tourist activities like bird/penguin watching etc. It is much less of a spectator activity and more interactive, up close and to a degree higher risk taking.”* Another respondent said, *“Shark divers are more adventuresome, braver, more naturalists.”* The increase in those viewing themselves as different could also simply be attributed to the fact that the majority of those who believed themselves to be different in the initial questionnaire were the ones who chose to participate in the follow-up questionnaire.

Respondents were asked to explain their answers about whether they thought shark divers were unique or special. The 113 responses were analysed and those that were similar were combined into themes. Fifteen themes emerged and these were quantified to ascertain counts and percentages. The most commonly occurring themes were: shark divers are more adventurous (31%), shark divers have more of an appreciation for sharks/wildlife (16.8%), shark divers are not that different (14.2%), shark diving requires specific qualifications (8%), shark divers desire a closer encounter, and shark diving has a perceived risk/danger (7.1% each). These results, in particular the first three, are similar to the responses from the on-tour questionnaire, whereas the desire for a closer encounter did not appear in the most common responses in the previous

questionnaire. This suggests that after having had time to look back on their shark diving trip, respondents may have gained an increased appreciation of their overall experience and realised that one of the factors that sets them apart is a desire for a closer encounter with sharks. It must also be remembered, though, that one-third (33.6%) of the respondents did not see themselves as that different from other wildlife tourists. This suggests that those respondents were simply taking advantage of an available opportunity rather than being devout shark divers seeking to participate in the activity. As one respondent commented, *“We aren’t special because we have dived with sharks, we are prosperous and fortuitously placed in Fiji.”*

As in the on-tour questionnaire, respondents were asked in the follow-up questionnaire to list up to three words they would use to describe someone who dives with sharks. The 304 responses were coded and then quantified, resulting in 41 different words. Due to the high number of different words provided, and low frequencies of the other 36, only the five most common words are presented. They are: adventurous (38.2%), curious (14.8%), wildlife-lover (9.9%), open-minded (3.9%) and intelligent (3%). The first three results are in the exact same order as those given in the on-tour questionnaire and are similar to some of the explanations given in the previous question regarding uniqueness of individuals who dive with sharks. Respondents view individuals who dive with sharks as being primarily adventurous, curious and having a love for wildlife. These descriptors are also similar to the top motivational factors given by divers in Tschapka’s (2006) and Bennett’s (2002) studies. As three respondents in this study said, shark divers *“All love the ocean”*, are *“More adventurous than the average traveller”*, and *“They are probably a different kind of people — adventurers, curious people.”* These results again demonstrate the adventurous nature of shark diving specifically and scuba-

dive tourism in general (Buckley, 2010; Musa et al., 2006; Dobson, 2007; Swarbrooke et al., 2003).

In the on-tour questionnaire respondents were asked to rank twelve different statements concerning attitudes and opinions about sharks; this same question was posed to respondents of the follow-up questionnaire. The mean score results for all twelve statements in the follow-up questionnaire are similar to those from the on-tour questionnaire (see Table 7.3).

Table 7.3: Post-tour attitudes and opinions towards sharks

Statement	<i>n</i>	Mean	Std deviation	On-tour Mean
Sharks are very important to our ecosystem	125	4.8	0.58	4.7
More marine reserves should be established for sharks	124	4.5	0.71	4.5
I enjoy learning about sharks	123	4.4	0.81	4.6
I think all sharks should be protected	124	4.0	1.06	4.0
I would like to touch a shark	125	3.7	1.22	3.9
Keeping a shark in an aquarium is cruel	124	3.3	1.15	3.4
Human interests should be put before shark interests	123	2.9	1.06	3.0
Killing sharks is okay if humans benefit	122	2.8	1.13	2.5
I am afraid of sharks	124	2.1	0.96	2.3
Shark teeth make good souvenirs	123	2.0	1.20	2.1
Challenge and excitement of catching a shark on a rod	124	1.9	1.26	2.4
Sharks are human eating machines	124	1.4	0.71	1.5

**Note:** 1 = strongly disagree; 2 = disagree; 3 = unsure; 4 = agree; 5 = strongly agree

Few changes occurred in the respondents' attitudes and opinions towards sharks between the two questionnaires, suggesting that the respondents felt the same about sharks even months after their diving trip as they did at the time of the dive. Given that the on-tour questionnaire results showed strongly positive opinions about sharks, it probably could have been predicted that little would change in this area. Two

respondents demonstrated this by saying in the follow-up questionnaire that the most valuable thing gained on their trip, even months after their dive experience, was a “*Greater appreciation of the beauty of sharks*” and “*How important it is to respect sharks and their natural feeding grounds so they are not endangered.*”

In order to delve more deeply into respondents’ on-tour and follow-up attitudes towards sharks, and to determine if any statistically significant differences existed, paired-samples *t*-tests were performed on all of the twelve statements. Five statements showed significant differences between the on-tour and follow-up mean scores (see Table 7.4).

Table 7.4: Respondents’ attitudes towards sharks — On-tour and follow-up mean scores

Attitudes	On-tour Mean	Follow-up Mean	<i>t</i> -test	Sig. (2-tailed)
Afraid of sharks	2.3	2.1	$t=2.3$ , $df=122$ , $p<0.05$	<b>0.024</b>
Learning about sharks	4.6	4.4	$t=2.2$ , $df=122$ , $p<0.05$	<b>0.029</b>
Challenge of catching a shark on a rod	2.2	2.0	$t=2.3$ , $df=121$ , $p<0.05$	<b>0.023</b>
Keeping a shark in an aquarium is cruel	3.5	3.4	$t=1.2$ , $df=123$ , $p<0.05$	0.245
Sharks are human eating machines	1.3	1.5	$t=-2.1$ , $df=122$ , $p<0.05$	<b>0.037</b>
Sharks are very important to ecosystem	4.8	4.8	$t=0.3$ , $df=123$ , $p<0.05$	0.747
Shark teeth make good souvenirs	2.0	2.0	$t=0.1$ , $df=121$ , $p<0.05$	0.927
Like to touch a shark	4.0	3.7	$t=2.9$ , $df=121$ , $p<0.05$	<b>0.004</b>
Killing sharks is okay if humans benefit	2.6	2.8	$t=-2.0$ , $df=119$ , $p<0.05$	0.050
All sharks should be protected	4.1	4.0	$t=1.1$ , $df=123$ , $p<0.05$	0.289
Human interests should be put before sharks	2.9	2.9	$t=-0.4$ , $df=121$ , $p<0.05$	0.664
More marine reserves should be established	4.5	4.5	$t=0.7$ , $df=123$ , $p<0.05$	0.469

**Note:** 1 = strongly disagree; 2 = disagree; 3 = unsure; 4 = agree; 5 = strongly agree

In the follow-up questionnaire, being afraid of sharks, learning about them, the challenge of catching one on a rod, and the desire to touch a shark all had lower mean scores than in the on-tour questionnaire, whereas sharks being human eating machines had a higher mean score. Although paired-samples *t*-tests have indicated significant differences among these five statements, the mean score differences between them are minor. The minor differences between all the twelve mean scores from the on-tour and

follow-up questionnaires suggests that not much changed in respondents' attitudes towards sharks from when they first experienced their shark diving trip until the time they filled out the second questionnaire, and thus they still regard sharks favourably.

#### **7.4 Post-tour impressions with education and interpretation offered on-tour**

Follow-up respondents were asked to rate the importance of education and interpretation on a shark diving trip using a five-point Likert-type scale, ranging from 'very important' (5) to 'not at all important' (1). The question received a mean score of 4.4, with nearly all (89.1%) of the respondents indicating education and interpretation as being either 'very important' (59.4%) or 'important' (29.7%). Receiving educational information shows to be regarded, even months later, as an important factor for divers on their trip. As two respondents stated, *"It is important in a special dive like this to relay pertinent and important information about what makes this type of dive unique"*, and *"I believe that not only education is very important but being educated about the species is even more important; if not provided at the excursion, the information would be lost therefore decreasing the importance of the event that is occurring."* This last quotation truly captures the importance of interpretation for many of the respondents. It also demonstrates that interpretation must make a connection to visitors, as Woods and Moscardo (2003) argue, and suggests that interpretational efforts must have a lasting impact on visitors, as argued by Orams (1996b).

Respondents were asked to explain their rating of the importance of education and interpretation on a shark diving trip. The 101 explanations were analysed and those that were similar combined into themes. The 12 themes were then quantified to ascertain counts and percentages (see Table 7.5). Although these responses reaffirm the importance of education and interpretation on a shark diving trip, operators should be

concerned that the respondents again were indicating that they desired more information, which suggests that they were not content with the information they were being given. As one respondent said, *“I feel that I would have benefited from more information given on the day”*, which is consistent with previous results indicating respondents’ strong desire for an educational experience when on a trip. The use of a word such as beneficial to describe the importance of education and interpretation further suggests the tourist’s desire for interpretational efforts to make a connection to them (Woods & Moscardo, 2003).

Table 7.5: Further explanations to the importance of education and interpretation

<b>Explanation</b>	<b>Count</b>	<b>%</b>
The more informed about sharks the better	29	28.7
Gives a greater appreciation for the experience	21	20.8
Would have liked more information	19	18.8
For safety reasons	9	8.9
Great opportunity to educate people about sharks	7	6.9
Important to learn about sharks	6	5.9
Important to educate tourists about local environment/culture	4	4.0
Important to educate tourists about the operation	2	2.0
Experience itself is the most important aspect	1	1.0
Deplore idea of taking shark fins	1	1.0
Motivate people to seek more information	1	1.0
Staged environment	1	1.0
<b>Total</b>	<b>101</b>	<b>100%</b>

Respondents were asked to rate their post-tour feelings about the importance of learning on a shark diving trip using a five-point Likert-type scale ranging from ‘very important’ (5) to ‘not at all important’ (1). The mean score for this question was 4.4 and almost the entire population sampled (95%) indicated learning to be either ‘important’ (46%) or ‘very important’ (49%) on a shark diving trip. These findings are consistent with the same question asked in the on-tour questionnaire, and a paired-samples *t*-test revealed that no significant difference existed between the mean scores from both questionnaires

for this question. Other studies (e.g. Ballantyne et al., 2011; Lück, 2003a; Meisel-Lusby & Cottrell, 2008; Tschapka, 2006; Bennett, 2002; Ditton et al., 2002; Meric & Hunt, 1998; Orams, 1997) have also analysed the importance of learning within the contexts of wildlife and scuba diving tourism. Learning or the experience of learning, it is argued, has shown to be an important motivating factor in the realm of marine wildlife tourism (Armstrong & Weiler, 2002; Packer, 2006; Packer & Ballantyne, 2004). One respondent in this study said that a motivational factor for any future shark dive would be, *“To learn more about the behaviours and external issues affecting sharks in the natural habitat.”*

Given results found throughout this thesis, as well as from previous studies, it could have been predicted that respondents would rate learning very highly, even months after their on-tour experience. The high importance of on-tour learning has emerged and recurred as a prominent theme in the current study. The desire to learn has also shown to be an important factor for tourists in other tourism studies (e.g. Ballantyne et al., 2011; Lück & Jiang, 2007; Lück, 2003a; Bennett, 2002). However, another recurring theme is respondents’ desire to have more educational information provided to them, in order learn more. As one respondent said, *“I would have liked to have been told more about the history of the shark in Fiji and the cultural context of sharks/shark diving in the country.”* Another comment, which suggests that learning is an important aspect and that more information was desired, was made by a respondent who stated that what was needed on-tour was *“Further education from dive operators to inform the public.”* These comments further affirm the notion that operators could make more of an impact on and a connection to their clients by providing them more educational information (Woods & Moscardo, 2003; Orams, 1996b), thus increasing their learning opportunities and potentially their overall experience.

Respondents were asked to list anything they remember being told about sharks during their diving trip. Since a wide variety of responses (114) were given, and some did not even relate to sharks, categories were created and these were quantified into counts and percentages. The five categories were: sharks/shark behaviour (57%), dive related (24.6%), not much/nothing (9.6%), experience related (5.3%) and conservation/local natural environment (3.5%). Although the largest category had to do with respondents indicating remembering being told about sharks/shark behaviour, the other categories have nothing to do with sharks directly. That one of the categories indicated that ‘not much or nothing was remembered’ suggests a deficiency on the part of the operators in the information being provided to their clients. It also shows that an impact on and connection to tourists through interpretation, as argued by Woods and Moscardo (2003) and Orams (1996b), is not being made by the operators. As two respondents said, “*I don’t think the shark diving operation told us anything*”, and “*I can’t remember much from Fiji.*” These two comments are similar to sentiments felt by divers in Dobson’s (2007) study, who indicated not learning anything on their trip. As Dobson (2007) claims, their responses suggest that scuba diving tours can lack an educational aspect. On-tour observations by the researcher, in this study, further affirmed that little on-site educational information was available. The respondents who said they remember being informed about sharks may have done so not so much because of any direct education and interpretation being provided to them but because they equated their actual experience of seeing sharks in their natural environment as something they remember being told.

Respondents were asked in the follow-up questionnaire to indicate how effective they felt the operators were in the following three categories: in their overall learning (in particular about sharks, local cultural and environmental issues), at providing

educational information that influenced a change in behaviour (e.g. in spreading a positive word about sharks and overall environmentally friendly behaviour), and at increasing awareness about current issues relating to sharks and/or other environmental issues. The mean scores in Table 7.6 show that respondents indicated feeling that operators were slightly less than effective in all three categories. This sentiment was summed up by one respondent who said, *“The dive operator could have provided us with A LOT more information on sharks, their behaviour, interaction with their ecosystem and environment and local environmental issues.”* This quotation further exhibits that there is a lack of impact and connection being made by the operator, through educational information, to the diver (Woods & Moscardo, 2003; Orams, 1996b).

Table 7.6: Effectiveness of the dive operator

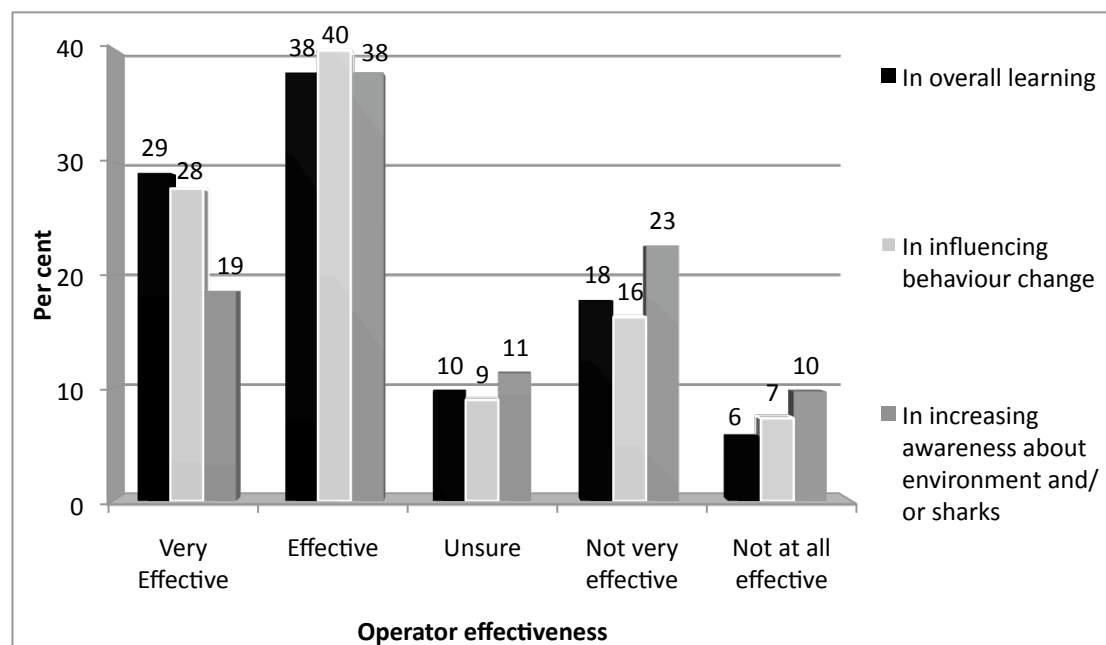
<b>Statement</b>	<b><i>n</i></b>	<b>Mean</b>	<b>Std deviation</b>
Operator effectiveness in overall learning	124	3.7	1.23
Operator effectiveness in influencing behaviour change	123	3.6	1.25
Operator effectiveness in increasing awareness about environment and/or sharks	124	3.3	1.28

**Note:** 1 = not at all effective; 2 = not very effective; 3 = unsure; 4 = effective; 5 = very effective

Frequency results suggest that most respondents felt that the operators were effective in their overall learning (67%), in influencing a change in behaviour (68%), and in increasing awareness about issues relating to sharks and/or the environment (57%) (see Figure 7.2). Despite previous findings showing that respondents desired more educational information from the operators, these frequency results suggest that divers were positively impacted by the shark diving experience, in particular getting up close to sharks, and as Dearden et al. (2007) argue, direct environmental experience is very

powerful. Respondents may have thus equated being exposed to sharks in their natural environment with feeling content with whatever educational information they were provided by the operators, even though it was minimal. As one respondent commented, *“I think it was a great dive — a very rare opportunity to be that close and see that much.”* Another respondent said that the most valuable aspect of their dive was *“The personal experience of seeing sharks up close in their natural environment rather than in an aquarium which is where I have always seen them before.”* These two quotations help to further affirm the theme, recurring throughout the thesis, that being exposed to sharks in their natural environment has an overall positive impact on divers and stimulates their affective domain.

Figure 7.2: Effectiveness of the dive operator



In the on-tour questionnaire respondents were asked to rate how effective they felt dive operators were in their overall learning as well as at increasing their awareness about shark issues; they were then asked the same questions in the follow-up questionnaire. Paired-samples *t*-tests were performed to determine whether any significant differences

existed between the mean scores of both questionnaires. A significant difference existed for operator effectiveness in increasing shark issues awareness but not for operator effectiveness in respondents' overall learning (see Table 7.7).

Table 7.7: Operator effectiveness — On-tour and follow-up mean scores

Operator effectiveness	On-tour Mean	Follow-up Mean	t-test	Sig. (2-tailed)
At increasing shark issues awareness	3.6	3.3	t=3.4, df=120, p<0.05	<b>0.001</b>
In overall learning	3.6	3.7	t=-0.8, df=120, p<0.05	0.410

**Note:** 1 = not at all effective; 2 = not very effective; 3 = unsure; 4 = effective; 5 = very effective

The respondents' feelings about operator effectiveness at increasing awareness about shark issues decreased between the two surveys: the on-tour questionnaire had a mean score of 3.6 for this question, but that score dropped to 3.3 in the follow-up questionnaire. This suggests that any impact felt on the day of the dive may have slowly diminished over time. After having had more time to deliberate, respondents may have realised the importance of learning about shark issues and thus felt further discontented by the information they received by the operators. As one respondent commented, "*We have to make people understand how important sharks are to our oceans and to human existence.*" This quotation demonstrates the importance tourists place on interpretation and contains elements consistent in Woods and Moscardo's (2003) and Orams' (1996b) models. It shows that interpretation must do more than just increase knowledge, it must also make a connection with tourists impacting them in a positive way and potentially leading to conservational actions being taken. Another respondent said that operators need "*To provide more educational information on the sharks.*" Although the mean scores for this question were not that far apart for both questionnaires, they should nonetheless prompt operators to reconsider their educational efforts, especially

regarding leaving a more profound impact on tourists (Lee & Moscardo, 2005; Tilden, 2007).

The second part of this question, regarding operator effectiveness in overall learning, yielded little difference in the mean scores between the two questionnaires: both on tour and at the follow-up stage, respondents had not scored the operators as being particularly effective (mean scores below 4). The slightly lower score from the follow-up questionnaire indicates that even months later respondents still felt that the operators were not completely effective in their overall learning. As one respondent stated, *“Although I have a greater understanding I still wish I had learnt more, but it has encouraged me to learn more for myself.”* A similar comment made by another respondent, targeted at the dive operator was, *“Invest more in education, keep up the good work you already do.”* These two comments adequately summarise what many results in this study have suggested: the desire for more educational information, and as such greater cognitive stimulation, yet at the same time the positive affective impact that the shark diving experience had on respondents’ overall learning. As MacCarthy et al. (2006) claim, divers may draw on even a few treasured moments as a way of overcoming certain aspects such as weather conditions or shortcomings of the operator.

Follow-up respondents were asked to provide any suggestions/recommendations they had for an on-tour education/interpretation programme. The 86 responses were analysed and those that were similar in subject matter were combined into themes. Sixteen themes emerged and these were then quantified to ascertain counts and percentages. The most frequently occurring responses included: pre- or post-dive briefing/class (29.1%), more information in general (26.7%), more books/audiovisuals (17.4%), provide handouts (8.1%), and describe sharks to be encountered (3.5%). These results are

similar to those given in the on-tour questionnaire and show that respondents are eager to receive educational information from a variety of sources, which is consistent with features of interpretation in Woods and Moscardo's (2003) model. These results provide the operators with valuable information about what divers desire in interpretational efforts. As Orams (1996b) argues, obtaining feedback from tourists, regarding educational efforts, is important; it is also the final stage in his model which is useful for informing and improving future interpretation efforts.

The recommendation of a pre- or post-dive briefing 'class' suggests that respondents would be willing to be educated formally, as if in a classroom setting, even during their leisure time. As one respondent stated, they would have liked from the operator "*More detailed and formalised education about types of sharks and their differences and similarities.*" Another respondent demonstrated a strong commitment to education by suggesting the operator "*Have somebody 'shark-knowledgeable' on board.*" This last comment further indicates that at the moment on-tour personnel with shark knowledge are lacking, or at least they are not making information available to their clients. These comments are also similar with features of interpretation likely to encourage mindfulness in Woods and Moscardo's (2003) model, particularly providing interpretation with a clear structure of content, the use of questions and making connections to visitors. Even though some resources, for instance handouts and brochures, are already available at the dive shops and on the boats, they are obviously not being utilised effectively by the operators, and as Uyarra and Côté (2007) and Medio et al. (1997) contend, even the slightest amount of educational information can be effective.

## **7.5 Summary**

This chapter has presented results and discussions, mainly from the follow-up questionnaire, dealing with the shark diving experience three months on. Results in this chapter have continued to reaffirm important themes already discussed in the previous two chapters. The experience of having close encounters with sharks is a facet of shark diving which again has shown to be highly valuable for respondents in this study and appears to have had a lasting impact on them. The lasting impact was demonstrated by respondents indicating taking a variety of actions since being back from their trip, such as talking more positively about and doing more research on sharks, promoting the dive to others and doing more for the environment overall. Respondents still showed a high degree of admiration and appreciation for sharks, and their attitudes and opinions of sharks appear to have stayed the same or were enhanced since their trip. Learning in general and about sharks specifically was viewed as an important aspect of the shark diving experience, even months after the trip. Despite respondents indicating being content with operator effectiveness regarding education and interpretation, they still would have liked more information provided to them, which suggests the need for operators to reassess their efforts in this area.

The majority of the respondents who answered the follow-up questionnaire still felt highly satisfied with their dive, which again demonstrates the lasting impact of the experience. Experienced and non-experienced divers alike both indicated a desire to take another shark diving trip in the near future and many said they would even return to the same locations in Fiji. Many respondents to the follow-up questionnaire indicated being motivated by similar factors for taking a shark dive as they had already indicated in the on-tour questionnaire. The two most important factors were to have close encounters with sharks and to learn more about them. Many respondents in the follow-

up questionnaire indicated still feeling that shark divers are a unique group of wildlife tourists, especially because they are more adventurous, have a greater appreciation for and a stronger desire for close encounters with sharks. Some respondents, however, indicated that they felt shark divers to be just like any other type of wildlife tourist.

### 8.1 Introduction

This chapter discusses the study's key findings and contributions, and presents a research agenda and the researcher's final thoughts. The main goal of this chapter is to present the information that addresses the study's two main aims and three research questions as well as to illustrate how this research has provided a deeper understanding of shark diving in Beqa Lagoon, Fiji, and with *O3*. The two main aims of this study were to gain a better overall understanding of the characteristics of the individuals participating in shark diving at the selected dive sites and to examine the role of education and interpretation, with particular attention on the Theory of Mindfulness and Orams' (1996b) Interpretation Model, within the context of shark diving. The three research questions designed to achieve these two aims included: (1) What are the characteristics of individuals attracted to shark diving at the selected dive sites? (2) What role does education and interpretation play within the shark diving context at the selected dive sites? and (3) To what extent does on-tour education and interpretation influence tourists' behaviour once they are back in their home environment?

Many of the marine wildlife tourism studies conducted in the last ten years have looked mainly at whale and dolphin watching (e.g. Alie & Singh, 2006; Garrod & Fennell, 2004; Higham & Lusseau, 2008; Lück, 2003a; Orams, 2002), and research focusing on the use of sharks for tourism purposes has only begun recently (e.g. Dicken & Hosking, 2009; Dobson, 2006, 2007; 2008; Topelko & Dearden, 2005). Within these studies there has been little attention placed on the very individuals participating in the area of shark tourism (i.e. their demographic characteristics, and their attitudes, opinions,

expectations and motivations), or on the utilisation and importance of on-tour education and interpretation as a way of providing valuable information (e.g. about sharks and the local environment) to tourists. By examining these aspects, this study has added to the theoretical knowledge base within the realm of shark diving as well as to the overall literature on wildlife and marine wildlife tourism.

## **8.2 Key findings**

Several authors have argued in favour of the importance of better understanding tourists (e.g. Coghlan & Prideaux, 2008; Frauman & Norman, 2004; Lück, 2003b) and, particularly relevant to this study, the diversity that exists among diving tourists (Musa et al., 2011; Garrod, 2008; Garrod & Gössling, 2008a; Stolk et al., 2007; Tschapka, 2006; Musa et al., 2006; Bennett, 2002; Musa, 2002). Information on certain aspects such as visitor expectations and activity participation and the social psychological needs of tourists can be significant in developing management strategies or actions to deal with impacts as well as ensuring optimum educational benefits (Lemelin & Wiersma, 2007; Moscardo et al., 2001).

One of the key findings in this study is the overview of shark diving participants that emerged from the research: there were slightly more males than female divers, and the majority of divers were overseas visitors, well educated, young, and above-average salary earners. All of these findings are consistent with results from previously conducted research in the area of scuba-dive tourism (Dicken & Hosking, 2009; Garrod & Gössling, 2008a; Thapa et al., 2006). Many respondents viewed themselves as being different from other wildlife tourists, and had been on many other wildlife tourism trips. For a large group of respondents, however, this was their first time shark diving. Learning was valued very highly by divers and they felt that the shark dive was highly

satisfying and left a lasting positive impact on them. Many respondents indicated a strong desire to take a subsequent shark diving trip in the near future.

Respondents indicated having a high level of respect and admiration for sharks. Many of them felt that sharks are very important to the overall ecosystem and in need of protection, and they indicated enjoying learning about them. These sentiments are contrary to the generally negative attitudes people have towards sharks (Barney, Mintzes, & Yen, 2005), which may suggest that the respondents in this study already had positive attitudes towards sharks even prior to attending their shark diving trip. When looking at how few of them actually had prior shark diving experiences, this could strengthen the argument that exposing tourists to natural environments, especially wildlife, reinforces attitudes towards those environments (Beaumont, 2001).

There are many factors that might motivate a person to dive with sharks, but the main ones indicated by the respondents were because of their love of sharks, the uniqueness of the activity, their desire to learn more/be educated, the overall experience and the opportunity to have close encounters with sharks. These results demonstrate the importance of the holistic shark diving experience, as well as the importance of having close encounters with sharks in their natural habitat. Respondents have indicated that shark diving is a unique experience and simply being exposed to sharks increases their knowledge and appreciation of them.

Although insights have been gained into demographic and psychographic characteristics of the study's respondents, developing an all-encompassing definition of the 'shark tourist' (e.g. an individual whose sole purpose of a trip is to interact with sharks) still remains a difficult task. Just the fact that 85% of the respondents indicated that shark

diving was not the main purpose of their trip to Fiji provides enough evidence of the difficulties inherent with trying to define these individuals. Many of these individuals may have merely stumbled upon the activity of shark diving rather than having sought it out intentionally. Rather than creating a definition to characterise these respondents, it was discussed whether the likelihood of classifying them instead, by using typologies, would be more effective. Based on the results in this study, however, trying to classify a shark tourist, using one of the many tourist typologies already developed, proves also difficult due to the diversity among divers.

Education and interpretation is a valuable component within many tourism settings (Stamaton et al., 2007; Townsend, 2008), but especially within the context of wildlife tourism where it can act as a potential management tool and as a way of enhancing visitor experiences. The two main dive operators working in Beqa Lagoon (*O1* and *O2*) are not providing and delivering a well-structured educational programme. Even though both operators had some valuable interpretive information available at their dive shops and on their boats, it was not effectively being conveyed to their clients.

The third operator, *O3*, indicated having a structured educational component on its tours but the researcher was not able to be present to observe the type of programme offered. According to one of the owners of *O3*, they offer information on a variety of environmental issues, including the types of wildlife encountered on each dive. *O3*'s owner also agreed with Lemelin and Wiersma's (2007) statement that a great asset of wildlife tourism is the educational opportunity it affords. Managers at *O1* and *O2* also recognised the importance of educating their visitors but conceded that their efforts at providing guests with a quality interpretation programme are lacking and in definite need of improvement.

Another key finding in this study was that respondents value highly the component of education and interpretation while on a shark diving trip. Although quantitative results showed that for the most part respondents were content with operators' overall educational efforts, open-ended results indicated that they desired more information. This finding should signify to dive operators that they could pay more attention to the provisioning of on-tour educational information to their clients. Although shark diving on its own is an activity which positively impacts the affective domain, there is potential for operators to enhance the experience, and potentially achieve the ultimate goal of prompting behaviour change, by appealing to their clients' cognitive domain as well (Hill et al., 2007; Orams, 1996b).

The high importance of learning, especially within the context of shark diving, was another key finding in this study. This finding, along with the high value placed on education and interpretation, shows that many shark divers, like in Dobson's (2007) study, desired more than simply an adventure packed, adrenaline filled experience. During both the on-tour and post-tour surveying phases, respondents indicated that learning, especially about sharks, was very important to them. Learning about, or having gained a greater general knowledge/awareness of sharks, was listed as the most valuable gain from the diving trip. Even though many respondents had indicated feeling that the operators were effective in their overall learning, they also indicated that they did not receive enough educational information from the operators and wished they had learned more on their trip. That the respondents felt satisfied with their on-site learning may be attributed not so much to on-tour education and interpretation efforts but more to the profound impact of the experience of being exposed to sharks, in which case the theme of learning is strongly linked to that of experiencing sharks up close in their natural environment.

Interacting with and being exposed to animals is an important element of a wildlife tourism experience, and can enhance overall satisfaction levels, on-tour learning, attitudes towards wildlife, and ultimately pro-conservation behaviours (Ballantyne et al., 2007; Dobson et al., 2005; Mayes, Dyer, & Richins, 2004; Tilt, 1987; Woods, 2000). Animals often arouse curiosity, amazement and awe and create cognitive dissonance in tourists simply by their behaviour (Schänzel, 1998). The positive impact of being exposed to sharks in their natural environment is a key finding that resonates strongly throughout this thesis and is linked to many other aspects of the overall shark diving experience as well, such as learning, education and interpretation, attitudes towards sharks, motivating factors, and in overall satisfactions levels.

This study's respondents have indicated that they place a great deal of emphasis on the experience of being exposed to sharks. For example, when asked what factors motivated them to take a shark diving trip, the most frequently stated responses included experience (ranked fourth) and close encounters with sharks (fifth). Respondents listed being able to see sharks up close (ranked second) and having a good time/cool experience (third) as their most valuable gains in the on-tour questionnaire, and these two items ranked second and fourth respectively in the follow-up questionnaire. Respondents also indicated feeling just as strongly about their overall shark diving experience months later as they did immediately following the dive.

The profundity of the experience of being exposed to sharks is strongly interconnected with the concepts of education and interpretation and learning. Wildlife tourism settings are great places for learning, and experiencing close encounters with animals in their natural environment helps to influence visitors' attitudes and increase their empathy for the conservation of species (Ballantyne & Packer, 2005; Tisdell & Wilson, 2005).

Results in this study have suggested that divers will inevitably learn by simply being immersed in the sharks' natural environment. The operators themselves believed that there was a strong connection between being exposed to sharks and learning. One operator said, "*Whether they know it or not...I do believe they're learning.*" Another operator commented, "*Ya definitely, I mean the observation thing is the biggest thing.*"

The findings in this thesis have shown that shark diving is by its very nature an educational activity, but that does not mean operators should disregard their educational efforts altogether. Making divers aware of the interpretive information they have on site, to stimulate the cognitive domain, in combination with the impact of the shark diving experience itself, which stimulates the affective domain, will stand to enhance their overall operation and possibly lead to increased behaviour changes (Orams, 1996b). Learning, however, does not have to be laborious or even be perceived as educational. In fact, as Medio et al. (1997) argue, even a minimal amount of educational information incorporated within a pre-dive safety briefing can be effective. In leisure settings (such as diving with sharks), learning can be seen as part of the enjoyment of the experience (Packer & Ballantyne, 2004), as was the case in this study.

### **8.3 Contributions of the study**

From the earlier work of Tilt (1987), Duffus and Dearden (1990), and Forestell and Kaufman (1990) to the more recent work of Dicken and Hosking (2009), Curtin (2010), and Catlin, Jones, Jones et al. (2010), many authors have explored the area of wildlife tourism. One of the main goals of this study was to contribute to this knowledge base by focusing on an area (shark diving) within the greater realm of wildlife and marine wildlife tourism. There are only a handful of studies that have examined shark diving or shark tourism, and among these, few have focused particularly on predatory sharks (e.g.

Brunnschweiler, 2009; Dicken & Hosking, 2009; Dobson, 2006, 2007, 2008; Dobson et al., 2005; Topelko & Dearden, 2005). The current study has added to this gap in research being conducted in the area of predatory shark diving and tourism and has made three main contributions. The first contribution made was in the area of education and interpretation, within the context of shark diving, by examining Orams' Interpretation Model together with the Theory of Mindfulness, particularly focussing on the work done and model developed by Woods and Moscardo (2003). The second contribution made was the methodological technique of double-surveying the exact same population of respondents, on-tour and post-tour. The third main contribution of this study was the creation of a model which is based on the recurring findings that show the significance of the impact of being exposed to sharks in their natural environment.

### **8.3.1 Orams' Interpretation Model with the Theory of Mindfulness**

Some authors in the area of tourism research, whether directly or indirectly, have explored both the Theory of Mindfulness (Frauman & Norman, 2004; Woods & Moscardo, 2003; Moscardo & Pearce, 1986) and Orams' Interpretation Model (Andersen & Miller, 2006; Ballantyne et al., 2007; Howard, 2000; Orams, 1996b; Ryan, Hughes, & Chirgwin, 2000; Tremblay, 2002; Zeppel & Muloin, 2008a) individually, but none have examined the two simultaneously. A major contribution of this research, therefore, was to examine these frameworks together within the context of shark diving, and in so doing address the study's second aim and second and third research questions.

The shark diving experience had a positive impact on divers' satisfaction levels, attitudes towards sharks and led to indications of actions being taken once back home. Many respondents even indicated being satisfied with the educational information they

received on their trip despite operators, in Beqa Lagoon at least, lacking a well-structured on-tour interpretation component. Orams' model is based heavily on educational and psychological theory and promotes a well-structured and administered interpretation programme, but the findings in the current study suggest that it may be less applicable to the shark diving settings chosen for this research.

In addition to examining the relevance of Orams' Interpretation Model, another goal of this study was to examine the relevance of the Theory of Mindfulness, especially in relation to wildlife tourism and within the context of shark diving. Moscardo and Pearce (1986) were among the first authors to incorporate the Theory of Mindfulness within the context of tourism. However, since then only a few studies have done the same (e.g. Frauman & Norman, 2004; Moscardo, 1999, 2000; Tubb, 2003), and among these only Woods and Moscardo's (2003) research focused specifically on the area of wildlife tourism, making their work particularly relevant to this thesis.

One of the results from the on-tour questionnaire that is relevant to the Theory of Mindfulness is that many respondents (57.1%) indicated never having been shark diving before, suggesting that they had a novel experience, which is one of the features of the experience likely to encourage mindfulness discussed in Woods and Moscardo's (2003) model, a central focus of this thesis, which will be dealt with in further detail below. Because these respondents were in a setting new to them, they may have been better able to draw novel distinctions and may have had a more open, creative and probabilistic state of mind, which is an important feature of the Theory of Mindfulness. Another relevant result is the immense importance placed on learning by respondents. The importance of learning combined with the profound and novel impact of the shark diving experience makes the likelihood of mindfulness on-site more possible.

According to researchers who have applied the Theory of Mindfulness to tourism (Frauman & Norman, 2004; Woods & Moscardo, 2003), operators have a certain responsibility to make their operation a mindful place. By utilising the mindful concept on-site, they can meet visitor needs while also aiding resource management efforts. Using the concept of mindfulness, Woods and Moscardo (2003) developed a model (see Figure 2.1) for communicating with visitors. The underlying premise behind that model is to create an environment that induces mindfulness because this will ultimately translate into more learning, higher satisfaction and greater understanding. Operators need to be cognizant of these factors especially since results in this study have shown that respondents desire more educational information from them.

In Woods and Moscardo's (2003) model, a combination of communication factors (multi-sensory media, novelty, conflict and surprise, visitor control, variety and change, connection to visitors, and use of questions) and visitor factors encourage either a cognitive state of mindfulness or a state of mindlessness. The shark diving setting, by its very nature, inherently contains many communication factors. For example, the shark diving setting is already a novel and multi-sensory environment full of variety, surprise, excitement and emotion. Since the shark diving environment is already conducive to learning and a fulfilling experience on its own, operators do not need to put a vast amount of effort into an interpretation programme, especially to probe at their clients' affective domain. Based on the communication factors outlined by Woods and Moscardo (2003), the operators of this study could focus more on better connecting with divers and providing them with more questions and more information, or at least making them aware of the information they do have on site.

According to Woods and Moscardo (2003), mindfulness and its application to tourism and interpretation appears to be relevant and useful in connecting various components of the wildlife viewing experience. They argue that the following seven core conditions are necessary to encourage a mindful and memorable wildlife experience: (1) a perception that the encounter is authentic or natural; (2) the involvement of animals that have not been seen live before; (3) a variety of wildlife; (4) perceived interaction with the wildlife; (5) perceptions of personal control over the encounter; (6) multi-sensory experiences; and (7) involvement of rare and/or unique wildlife. The shark diving setting contains some elements of each of these seven conditions.

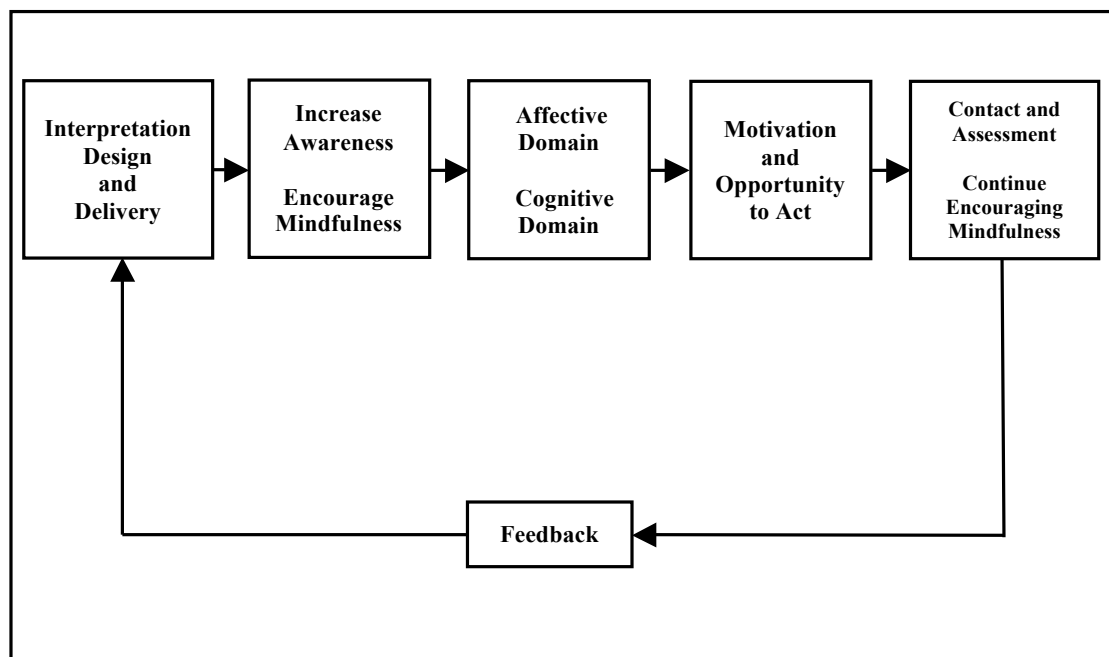
Regarding Woods and Moscardo's (2003) first core condition, almost all (97.3%) of the respondents in this study indicated that their shark diving experience was highly satisfying and one of their most valuable gains was being close to sharks in their natural environment. The second and seventh core conditions, which are similar, were present because generally not only is viewing sharks a rare and unique experience on its own, respondents in this study indicated their excitement with the opportunity to see specific animals such as bull (*Carcharhinus leucas*) or tiger sharks. Respondents also rated liking sharks and the uniqueness of the experience as their number one and two motivating factors for choosing the activity of shark diving. The researcher's observations and comments made by the divers indicated that there was a large variety of wildlife present during the dive (e.g. eight different species of sharks, as well as a variety of other fish such as giant trevally, grouper, sea bass and many smaller fish), and thus Woods and Moscardo's (2003) third core condition was present.

Respondents indicated that they were largely in favour of interacting with sharks; this suggests that the fourth core condition, the perceived interaction with the wildlife, was

present at the dive sites. Respondents indicated throughout both questionnaires that they had been positively impacted by the opportunity to interact with sharks; this suggests they had a perceived sense of control over the encounter, and thus the fifth core condition was present. Finally, Woods and Moscardo's (2003) sixth core condition, a multi-sensory experience, was a part of the whole shark diving experience. Shark diving is an activity which actively involves participants and positively impacts many of their senses.

Although mindfulness is inherently present during the experience, educational efforts, as prescribed by Orams (1996b) in his Interpretation Model, are lacking at the dive sites. With this factor in mind, and inspired by results in the study, emerged the notion to create an adaptation of Orams' Interpretation Model, which incorporates mindfulness concepts, to demonstrate the way these two constructs are useful together within the context of shark diving and as a potential tool for operators to consider (see Figure 8.1).

Figure 8.1: Interpretation Model for Shark Diving



(Adapted from: Orams, 1996b)

This newly adapted Interpretation Model for Shark Diving is based largely on Orams' model and has been informed by the Theory of Mindfulness, with a main focus on the work of Woods and Moscardo (2003), particularly their Mindfulness Model for Wildlife Tourism. Since both models were created within wildlife tourism contexts it makes them most relevant and applicable to this study.

While educating tourists for the sake of managing their attitudes and behaviours, particularly on site, is definitely an important aspect, this does not need to be the main focus within the realm of shark diving. The shark diving sites of this study have already shown to be highly structured and well managed, especially regarding pre-dive briefings and the attention that is placed on diver safety. From an education and interpretation standpoint, the activity of shark diving at the dive locations in this study need not focus too heavily on managing divers' behaviour on site but rather more on continuing to enhance the diver experience. Shark diving is an intimate activity, between human and animal, and the results in this study, as well as others previously conducted in the area of wildlife tourism (e.g. Dobson, 2007, 2008; Zeppel, 2008; Dobson et al., 2005), have demonstrated the notion that the experience of being exposed to animals alone provides positive learning outcomes.

The first stage of this newly adapted model is the design and delivery of interpretational efforts. As the directional arrows indicate, this stage is closely linked to the others. When designing and delivering their interpretational efforts, therefore, operators should be aware of and make use of relevant information in the subsequent stages of the model. Since the shark diving environment, as this study has shown, is one that is inherently ripe with elements of mindfulness and learning opportunities, an overly complex educational programme is not an absolute necessity. The importance of this stage,

however, is that operators take into consideration how they can best design and deliver educational information to their clients, even if at the very least utilising the information already on hand.

In the next stage of the newly adapted model, operators could focus on increasing tourists' awareness of the information that already exists. Dive masters on board the boat and staff at the office could let divers know where they can find that educational information. For example, booklets containing biological profiles of species to be encountered were available on board the dive boats yet divers were not made aware of them. An opportune time to inform divers about these booklets is during the safety briefing. This stage of the model is one where operators can focus on the key features (i.e. features of the experience, the tourists, interpretation and the animal) likely to begin encouraging mindfulness, as outlined in Woods and Moscardo's (2003) model. The results in this study have shown that many shark divers have a high interest in viewing wildlife and are excited about encountering sharks, making them likely candidates to whom operators can encourage mindfulness. Focussing on the other three features, operators could make connections to the visitors by providing them with clearly structured content, asking relevant questions and explaining aspects of the dive, such as its rarity, uniqueness and some of the wildlife that will be encountered at close proximity. Addressing these features likely to encourage mindfulness early into the shark diving trip could get divers thinking about what is to come and initiate their involvement with the activity.

The purpose of the third stage of the Interpretation Model for Shark Diving, like in Orams' model, is to engage divers' affective and cognitive domain. In this stage, mindfulness coincides with the model's objectives of impacting divers' attitudes,

feelings, emotions and value systems. According to Woods and Moscardo's (2003) seven core conditions necessary for encouraging a wildlife experience, this stage provides operators with the opportunity to heighten tourists' expectations further by pointing out the variety and rarity of species they will be encountering underwater. Within this stage operators can continue asking questions to get divers involved cognitively as well as discussing emotive aspects about the interactions with the wildlife, thus further preparing participants for what to expect on their dive. To further engage the divers, operators could also provide them with an opportunity to watch informative documentaries or movies, which promote the conservation of sharks, directly on board the boat on the way to the dive site and during surface intervals. Results in this study have shown that many respondents desired more educational information and are ready and willing to be cognitively stimulated through a variety of sources.

The purpose of the fourth stage of the newly adapted model is to prompt behaviour changes. At this stage, the intention is to provide divers with motivation and opportunities to take pro-conservation actions. An adequate time to provide motivation is just after divers have completed their dive, when feelings and emotions are at their peak. After just having returned from their experience, divers may be more encouraged to listen to information that will motivate them to act. Besides levies being charged, which is an involuntary part of the dive, no opportunities were visibly available on the boat or back at the dive shop for the tourists to take voluntary conservation actions. Once divers are back at the dive shop, changing and signing their dive logbooks, this would also be an ideal time for operators to provide a list of organisations that deal specifically with shark conservation and information about how to join or donate to one of these organisations. The newly adapted model, however, recognises that motivation

and opportunities to act work hand in hand, in that by simply providing opportunities, at any point in the dive experience, operators could create a motivation for divers to take actions.

At stage four of the Interpretation Model for Shark Diving, operators could focus on reinforcing the key features likely to encourage mindfulness, as outlined in Woods and Moscardo's (2003) model. They could reiterate the uniqueness of the experience, particularly concerning close proximity to animals, and emphasise the rarity and importance of sharks. They could also increase or re-activate the likelihood of mindfulness by asking divers questions related to their experience, sharks and the marine environment as well as providing them with information about the plight of sharks, for example, by discussing issues such as over-fishing and finning. This information may prompt divers to act immediately which would be a positive step towards the conservation of sharks because, despite their initial intentions, many of the study's respondents indicated not having taken actions such as donating money and joining conservation groups since they had returned home.

The fifth and sixth stages of the newly adapted model are opportunities for operators to make contact with divers willing to provide their email addresses. On a business level, obtaining feedback from the divers regarding their educational efforts and/or other aspects of their operation could be useful for the operators. Being better informed as to how their clients view their overall product will help the operators to know what is effective and what needs improvement, which ultimately may lead to an enhanced experience for their clients. Furthermore, from a shark-conservation perspective, keeping in contact with divers provides operators with opportunities to send them more educational information regarding shark issues and/or point them to other sources

containing information about these issues. Maintaining contact with divers may also increase the likelihood of keeping them mindful and more willing to act in favour of conservation, even long after the shark diving experience.

The newly adapted model has shown that incorporating aspects of the Theory of Mindfulness (i.e. with a main focus on elements in Woods and Moscardo's (2003) Mindfulness Model for Wildlife Tourism) within Orams' Interpretation Model can potentially be useful within the shark diving setting. An important facet of the Interpretation Model for Shark Diving is its simplicity. The shark diving environment is one already inherently rich with opportunities for encouraging mindfulness and making divers' experiences memorable, and the model demonstrates that it is not necessary for shark diving operators to design a highly complex programme in order to have an effective educational component. The goal of the newly adapted model is to provide the operators with a visual tool that inspires them, at the very least, to reconsider their educational efforts and hopefully improve them, which could subsequently lead to an even further enhanced experience for and potentially even more pro-conservation actions being taken by divers.

### **8.3.2 The methodological technique of the study**

A minor contribution of this research, conducted within a shark tourism setting, was the methodological technique of surveying respondents twice, on-tour (i.e. immediately following the shark diving trip) and three months, or more, after their trip. Some studies have already employed this technique of double-surveying tourists within other tourism settings (e.g. Howard, 2000; Lee & Moscardo, 2005; Munro et al., 2008), but this study has two main differences to the earlier works: first, the double-surveying technique was used in the specific area of shark diving, and second, direct comparisons were made

between the exact same population who had answered the on-tour questionnaire and who also answered the follow-up questionnaire three months or more after the shark diving experience (i.e. responses were isolated in a way that only those answering both the on-tour and follow-up questionnaires were grouped together into one master SPSS spreadsheet).

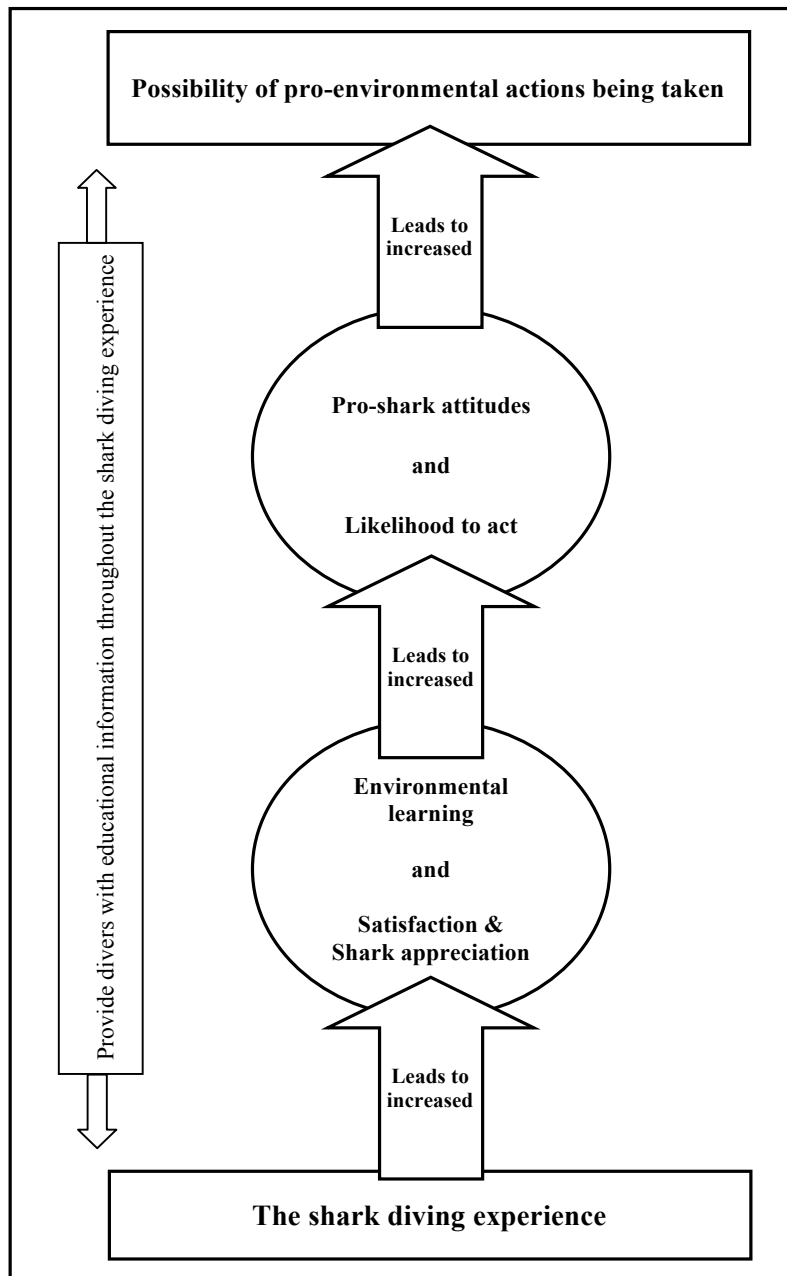
The double-surveying technique used in this study provided a great opportunity to make direct comparisons of the exact same population and as a result assisted in addressing the third research question. Using this method provided richer and more robust results and enabled comparisons of, for example, on-tour intentions with post-tour behaviours, attitudes and perceptions of sharks both immediately and three months after the dive, and on-tour and post-tour perceptions of the overall experience. The results helped to confirm that respondents' post-tour attitudes of sharks were enhanced because of their experience, or at the very least remained the same. Post-tour results also showed that respondents indicated taking two-thirds of the actions they had indicated they would and that they were just as excited and satisfied with their shark dive three or more months after the experience as they were immediately following their trip.

### **8.3.3 The shark diving experience model**

One of the main findings of this study was that being exposed to sharks in their natural environment can have a positive and lasting impact on divers and from this important finding emerged the inspiration to construct a new model. The Shark Diving Experience Model was thus created to illustrate this finding and how it relates to other important results in the study (see Figure 8.2). The premise behind this model is that the shark diving experience inherently leads to increased learning while simultaneously evoking a high sense of satisfaction and an increased appreciation for sharks and the local

environment. On many occasions respondents indicated being highly satisfied with their trip and showed a high level of appreciation for sharks after their diving experience.

Figure 8.2: The shark diving experience



Increased learning, satisfaction and shark appreciation subsequently lead to the increased likelihood of divers taking pro-conservation actions while enhancing their attitudes and opinions towards sharks. Many results, in both questionnaires, showed that respondents had positive attitudes towards sharks. Their likelihood to act was also

demonstrated by many of them indicating that they had actually performed four out of six items regarding what they had done since being back from their trip. Results in this study have shown that the shark diving environment is one where learning occurs even without an extensive educational programme in place.

Despite these results, however, divers have demonstrated a desire for more educational information from the operators. Thus, it would also be valuable that throughout the course of the diving experience operators provide divers with educational information, even if on a smaller scale, such as communicating interpretive messages verbally, even during the pre-dive briefing and providing informative brochures. All of these factors combined ultimately leads to increased possibilities of actual pro-environmental actions being taken after the shark diving experience has been completed.

#### **8.4 A research agenda**

Although this thesis has helped to fill some gaps in the marine wildlife tourism literature there is still need for further research in the area of shark diving, especially regarding education and interpretation and to gain a better understanding of the types of individuals who participate in this activity, in the hopes of one day better classifying or even defining them. Zeppel (2008) argues that there is a particular need for more studies in the areas of marine tourism interpretation programmes and understanding various aspects of the visitor experience, including the role of experiential learning in generating empathy and changing environmental behaviour. Garrod and Gössling (2008a) argue that there is also an inadequate amount of data in the general area of scuba-dive tourism.

Future studies could continue examining the area of the shark diving experience and how it impacts aspects such as divers' satisfactions, perceptions, attitudes and pro-environmental behaviours. A specific area requiring further investigation is the measuring of visitors' post-tour behaviours based on on-tour intentions. As Thapa et al. (2006, p. 612) argue, "the study of environmental behaviours from a social science perspective has limitations because it tends to rely on self-reported instead of observed behaviours." Gralton et al. (2004) argue that the field of educational interpretation lacks hard evidence concerning impacts in the form of pro-environmental behavioural changes in participants. Future studies could continue examining and evaluating the effectiveness of educational efforts as well as the shark diving experience on participants' long-term behaviours, especially by using more qualitative methods such as interviews and observations, which may provide more varied results. MacCarthy et al. (2006), who have employed both quantitative and qualitative techniques, claim that getting to the heart of what determines diver satisfaction can only be adequately explored using qualitative methodology. Dobson (2007) argues that the most important aspect of using a qualitative method, as he employed in his study, is to provide an in-depth analysis of meaning and highlight interesting issues.

An important methodological technique of this research was to conduct an on-tour questionnaire, immediately following the shark dive, and then a follow-up questionnaire within a period of approximately three months. The short period of time between the two questionnaires in this study proved valuable but an area of future research could be to conduct studies with medium- and longer-term follow-up periods, such as one and two years. Longitudinal studies, i.e. surveying divers once a year for a period of five or ten years, could also be conducted and would most likely yield valuable results.

To extend the current study even further, the models presented in this chapter could form the foundations for future research. The Interpretation Model for Shark Diving could be used as a framework for a methodological approach that could be applied to then test The Shark Diving Experience Model. The former model could be examined using both quantitative and qualitative techniques in order to better understand the impact of educational efforts on the elements within the latter model, i.e. divers' satisfactions, attitudes, learning, likelihood to take actions and ultimately pro-environmental actions actually taken. A study such as this would require a deeper level of post-dive inquiry in order to determine if intended pro-environmental actions are in fact being taken. Qualitative testing, particularly through observations, would thus work best to inform this research problem. In other words, the best way to determine if someone is actually performing intended actions is to observe them firsthand.

Focusing on more than one location is another area for future research. As Zeppel (2008) argues, much of the research on marine wildlife tourism is site- or species-specific and limited to one type of encounter. Although effective and suitable for this study, the research presented in this thesis also focused on only one location, and with only one researcher. Future studies in the area of shark tourism could focus on expanding its scope; for example, shark diving operations based in Pacific Harbour could be compared with those at other locations around the world, such as the Bahamas or Australia, or a team of researchers could be used, one at each site, for the duration of the data-collecting period. Taking into account other locations and having increased researcher presence could provide greater insight into the overall worldwide shark diving industry.

The pressing issue of provisioning or shark-feeding is also an area worthy of future research. Two of the operators in this study, those diving in Beqa Lagoon, used food to attract sharks to their sites. Although some mention of shark feeding was apparent in this study, future research could probe further into this issue. Stakeholders such as divers, operators, protected areas staff, political leaders and various members of the local community, could be surveyed for their thoughts about this controversial practice (Lobel, 2008). These stakeholder groups could be the focus of in-depth interviews to get their thoughts and opinions on a variety of other shark diving issues as well.

## **8.5 Final thoughts**

The current study comes at a critical time in the evolution of marine wildlife tourism research. Shark diving has become a popular recreational pursuit and has developed into an important and growing component of the international tourism market (Dicken & Hosking, 2009). There are shark diving sites around the globe (Carwardine & Watterson, 2002; Gallagher & Hammerschlag, In Press) with one of the most recent initiatives potentially opening in Foveaux Strait, New Zealand, in the near future (Price, 2009). The shark tourism industry in general is therefore in need of more attention from academic researchers.

Further research will not only continue adding to the shark tourism knowledge base but may also assist, even if only in a minor way, to reduce the current and future plight of sharks. An estimated 100 million plus sharks are killed annually and removing them from the oceans will have serious consequences for the entire ecosystem (Stewart, 2007a). Topelko and Dearden (2005, p. 124) argue that, “one of the greatest challenges of shark conservation is reversing the traditional image of sharks as human eating machines.” They contend that the dive industry can play an important role in fostering

positive attitudes towards sharks and that tourists participating in organised shark-watching ventures can make positive contributions to the conservation of sharks.

Although it is still too early to gauge the accuracy of Topelko and Dearden's (2005) sentiments, if some of the results in the current study are any indication, the shark diving industry can potentially assist with the protection and conservation of sharks. However, one thing is for certain, as the shark tourism industry expands, further research is required to evaluate how using sharks for tourism purposes impacts on the well-being of these creatures.

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## Appendix A: On-Tour Questionnaire

### Diving with Sharks in Fiji (On-Tour Questionnaire)



The researcher Roberto Altobelli (from AUT University in Auckland, NZ) is conducting research into various aspects of your diving experience today. I would gratefully appreciate it if you could take 15-20 minutes to complete this questionnaire. By filling out this questionnaire you are assisting not only this study but hopefully to the future management and conservation efforts relating to shark tourism and the well being of various shark species in Fiji. By completing this questionnaire you are indicating your consent to participate in this research.

#### SECTION 1: You, the 'Shark Tourist'

**1a.** Please list the number of 'other' times (not including today) you have participated in wildlife tourism activities (i.e. taken a trip with the specific purpose of seeing any animal in its natural environment):

☐ 0 times      ☐ 1-3 times      ☐ 4-6 times      ☐ 7-9 times      ☐ 10 times or more

**1b.** Please list the other forms of wildlife tourism activities you have participated in (e.g. whale/dolphin watching, bird watching, polar bear watching, big game safaris, etc.):

**2.** Please indicate with whom you are travelling on your current trip (*you may select more than one*):

☐ Alone    ☐ with Friends    ☐ with Partner    ☐ with Family    ☐ with a Tour Group or Club

☐ Other: (please list): \_\_\_\_\_

**3.** Do you belong to a diving club/s?

☐ YES      ☐ NO

If YES please list it/them or the City/Cities they are located in: \_\_\_\_\_

**4.** Was 'diving with sharks' the **main** purpose of your current trip to Fiji?

☐ YES      ☐ NO

If NO please explain the 'main' purpose of your trip:

**5.** Please list up to **THREE** words that come immediately to mind when you think of a shark:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

**6.** Have you ever been shark diving before today?

☐ YES      ☐ NO

If YES where? \_\_\_\_\_

**7.** Please briefly explain why you have chosen **Fiji** as a place to go shark diving:

**8.** Overall, how satisfied would you say you were with your shark dive experience today?

☐ Very satisfied    ☐ Satisfied    ☐ Unsure    ☐ Not very satisfied    ☐ Not at all satisfied

**9.** Please list up to **THREE** things that have *motivated* you to choose shark diving as an activity:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

**10.** Please choose **ONE** (the most important) motivating factor from question 9 and describe why it is so important to you:

\_\_\_\_\_  
\_\_\_\_\_

**11.** Would you say that people, like yourself, who participate in shark tourism, are 'unique/different' to other tourists? (e.g. other tourists such as wildlife viewing tourists, nature based tourists, mass tourists, etc.)

☐ YES      ☐ NO

Whether you answered YES or NO, please explain your answer further:

\_\_\_\_\_

12. Please list up to **THREE** words you would use to describe someone who dives with sharks for recreational purposes (in other words a *shark tourist*):

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

13. Please indicate (with a ✓) your level of ‘agreement’ with **EACH** of the following statements:

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
I am afraid of sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoy learning about sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think catching a shark on a rod would be challenging and exciting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Keeping a shark in an aquarium is cruel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks are human-eating machines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks are a very important part of our whole ecosystem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think shark teeth make good souvenirs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like to touch a shark	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think it is acceptable to kill sharks if humans benefit from it (e.g. to help cure diseases)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think all sharks should be legally protected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think human interests, especially safety, should be put before shark interests (e.g. using nets to keep sharks out of waters humans use for swimming)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More marine reserves should be established to protect all sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SECTION 2: Education and Interpretation** (Please note: Education/Interpretation refers to valuable and relevant educational information communicated to you by the operator regarding a variety of topics such as sharks, Fiji and other important environmental issues about the area in which the dive site is located).

14. Please indicate (with a ✓) how important **EACH** of the following is to you on a shark dive, such as the one you participated in today:

	Very Important	Important	Unsure	Not very important	Not at all important
The opportunity to ‘learn’ things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The ‘thrill’ of seeing sharks up close	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having fun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Educational information provided by the operator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling safe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being with people with similar interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taking Photographs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensuring that no sharks are harmed (either by yourself, fellow divers or the dive operator)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Please list **THREE** things a dive operator could do to make ‘the delivery’ of educational information to the tourist as effective as possible:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

16. Please indicate (with a ✓) your level of satisfaction with **EACH** of the following:

	Very satisfied	Satisfied	Unsure	Not very satisfied	Not at all satisfied
The ‘overall’ educational information provided by the operator on your trip today	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All other educational information provided to you by the operator (e.g. websites, email, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Please indicate (with a ✓) how effective you felt the operator was:

	Very effective	Effective	Unsure	Not very effective	Not at all effective
At increasing your awareness about issues relating to sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At increasing your awareness about other environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In your overall learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. As a tourist, how important would you say 'learning' is to you? (i.e. on any trip you would take)

☐ Very important    ☐ Important    ☐ Unsure    ☐ Not very important    ☐ Not at all important

19. Please list anything you feel you have learned on your trip today:

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20. Do you feel that whatever you have learned today will influence a change in your behaviour once you are back home?

☐ YES    ☐ NO    ☐ UNSURE

Please explain your answer: 

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21. Please complete the following sentence:

**For the sake of conserving sharks and their environment I would be willing to:**

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22. Following your shark dive trip today, how likely would you say you are to do **EACH** of the following, in the future?

	Very likely	Likely	Unsure	Unlikely	Very unlikely
Do more research on sharks (e.g. watch documentaries on sharks, web research, read more about sharks)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Donate money to the conservation of sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Join a shark conservation group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take opportunities to talk more positively about sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Promote shark diving to others as an opportunity for them to learn more about sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do more for the environment overall (especially little things like recycling and reducing waste and energy usage)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### SECTION 3: Additional Information

23. What would you say is the most valuable thing you gained today from your shark diving experience?

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24. Please provide any additional suggestions/comments you feel would benefit this study and or the dive operator:

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**SECTION 4: Demographic Information** – Please answer each question as accurately as possible.

25. Gender:

☐ Male ☐ Female

26. Please indicate which of the following categories best describes your age:

☐ 20 – 24      ☐ 25 – 29      ☐ 30 – 34      ☐ 35 – 39  
☐ 40 – 44      ☐ 45 – 49      ☐ 50 – 54      ☐ 55 and above

27. Please indicate your highest level of education completed (please choose only one):

☐ High School    ☐ Some university credit but no degree    ☐ Bachelor's Degree (e.g. BA, BSc)  
☐ Master's Degree (e.g. MA MS, MEd)    ☐ Professional Degree (e.g. MD, LLB, DDS)  
☐ Doctorate Degree (e.g. EdD, PhD)    ☐ Other (please list): \_\_\_\_\_

28. Please indicate which of the following categories best describes your approximate individual annual income 'before tax', in **US dollars** (some approximate conversions: **1USD=1.13AUD**; **1USD=1.02CAD**; **1USD=1.56 FJD**; **1USD= 107JPY**; **1USD=1.32NZD**; **1USD=0.51GBP**; **1USD=0.68EUR**):

☐ Under \$45,000    ☐ \$45,000-75,000    ☐ over \$75,000

29. Please indicate your country of residence:

☐ Australia      ☐ Canada    ☐ Fiji    ☐ Other Pacific Island (please list): \_\_\_\_\_    ☐ Japan  
☐ New Zealand    ☐ UK      ☐ US    ☐ Other (please list): \_\_\_\_\_

30. Please indicate which of the following best describes your occupational status (please choose only one):

☐ Professional (e.g. med, law, edu, etc.)    ☐ Managerial, Executive    ☐ Administrative, Clerical  
☐ Engineering, Technical    ☐ Marketing, Sales    ☐ Skilled craft or trade  
☐ Semiskilled occupation    ☐ Student    ☐ Other (please list): \_\_\_\_\_

**THANK YOU** 😊 very much for taking the time to help in this research. As a follow up to this study the researcher would like to contact you in three months time via email to ask you to complete one more on-line questionnaire about your experiences today. As outlined above, your input is very valuable and very much needed not only for this research and for the dive operators but also for the potential conservation and management of sharks in Fiji. Therefore, I would be very grateful if you could provide me with an email address to which I can send you a web link to the 'Follow-up' on-line questionnaire.

**E-mail address:** \_\_\_\_\_

**PLEASE NOTE** your email address will only be used for the purpose of sending you the link to the 'follow-up' (on-line) questionnaire. It will **NOT** be used for any other purpose, or passed on to a third party. Again, your contributions to this research are greatly appreciated.

Approved by the Auckland University of Technology Ethics Committee on 3 December 2007, ATEC Reference Number 07/225.

# Participant Information Sheet

## Questionnaires



**Date Information Sheet Produced:**

23 January 2008

**Project Title: Shark tourism in Fiji: An examination of education and interpretation**

### **An Invitation**

As a key individual in the shark diving industry in Fiji, you are a very important part of the overall operations of the industry as well as the Fijian economy. You are invited to participate in this research on shark tourism in Fiji through both an on-tour and follow-up (3 months from now) questionnaire. Your participation is entirely voluntary and you may withdraw at any time without any adverse consequences.

### **What is the purpose of this research?**

This research aims to explore the shark tourism industry in Fiji with particular attention being focused on the overall importance of the role of education (i.e. the communication of information from the dive operator to the tourist) to the shark dive industry. This research also aims to gain a better understanding of another crucial element in the overall shark diving industry and that is 'you' the *shark tourist*.

This research is being conducted as part of my Doctor of Philosophy at AUT University, Auckland, New Zealand. Results will also be used in journal and conference publications.

### **How was I chosen for this invitation?**

You are seen as an important contributor to the overall functioning of shark dive tourism here in Fiji and thus you have been chosen for this research project. Your participation is very greatly appreciated. However, please understand that your participation in this study is entirely voluntary.

### **What will happen in this research?**

This part of the research involves you filling out an on-tour questionnaire and you are also invited to fill out a follow-up on-line/web-based questionnaire (3 months from now). Other participants in this study include local fishermen, who will be interviewed, and dive operators/key employees who will also be interviewed. Once all data are collected I will analyse them and write up the results and findings in my final thesis and other publications.

### **What are the discomforts and risks?**

You are giving your valuable time and information to help with this research and I can assure you that I have considered your well-being. You may also be concerned that I will 'leak' confidential or sensitive information to others.

### **How will these discomforts and risks be alleviated?**

All questions are optional, and you may choose not to answer some questions and or terminate your participation in the survey at any time. I am strictly bound by my Universities ethics procedures and processes. I will not pass on any information to others or identify you in any

way and I have done my utmost to keep the filling of the questionnaires to a minimum (10 – 15 minutes). I will also ensure that all data are stored in a secure place (a lockable filing cabinet in my office), out of reach of others.

### **What are the benefits?**

This research will help paint a clearer overall picture of participants (such as yourself) of shark diving in Fiji. It will also help highlight the importance of the role of education at the selected dive sites and how it may assist in the management of the industry and the well-being of shark species in Fiji. Your input will provide an important stakeholder perspective.

### **How will my privacy be protected?**

All answers will be kept confidential and your answers will in no way be linked to your personal details. The results will be presented in aggregate and no individual will be identified in any of the publications relating to this research. I may wish to include quotations from your questionnaires, in my publications, but I will keep your identity anonymous. Also, regarding your email address, it will be kept completely confidential and only be used for the purpose of sending you the link to the 'follow-up' (on-line questionnaire). It will not be used for any other purpose, or passed on to a third party.

### **What are the costs of participating in this research?**

The questionnaires will take approximately 10 – 15 mins.

### **What opportunity do I have to consider this invitation?**

Once you have read over this information sheet you can decide whether or not you would like to participate in the study. Also, if at any point you feel you do not wish to continue, with either questionnaire, you are free to withdraw your participation from this study.

### **How do I agree to participate in this research?**

To participate in this research, simply fill out a questionnaire. In other words, by filling out a questionnaire you are giving your consent to participate in the study. Also, by providing your email address at the end of the first questionnaire you are giving your consent to participate in the follow-up questionnaire as well (3 months from now).

### **Will I receive feedback on the results of this research?**

The results of this research will be available on [www.nztri.org](http://www.nztri.org) in early 2009 once the study has been completed.

### **What do I do if I have concerns about this research?**

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr Michael Lück: email [mlueck@aut.ac.nz](mailto:mlueck@aut.ac.nz), phone 09 921 9245 ext 5833

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEK, Madeline Banda, [madeline.banda@aut.ac.nz](mailto:madeline.banda@aut.ac.nz), 921 9999 ext 8044.

### **Whom do I contact for further information about this research?**

**Researcher Contact Details:** Roberto Altobelli: email: [rob.altobelli@aut.ac.nz](mailto:rob.altobelli@aut.ac.nz), phone 09 921 9999 ext 6410

**Project Supervisor Contact Details:** Dr Michael Lück: email: [mlueck@aut.ac.nz](mailto:mlueck@aut.ac.nz), phone 09 921 9245 ext 5833

## Appendix C: Follow-up Questionnaire

### Diving with Sharks in Fiji (Follow-up Questionnaire)



Auckland, New Zealand

The researcher Roberto Altobelli (from AUT University in Auckland, NZ) is conducting research into various aspects of your Fiji diving experience from three months ago. I would gratefully appreciate if you could take 15-20 minutes to complete this follow-up questionnaire, to the one you filled out 'on-tour' 3 months ago. By filling out this questionnaire you are assisting not only this study but hopefully to the future management and conservation efforts relating to shark tourism and the well being of various shark species in Fiji. By completing this questionnaire you are indicating your consent to participate in this research.

#### SECTION 1: Shark diving's influence on 'you'

1. Please indicate (with a ✓) your level of **extent** to each of the following questions:

	A lot	Some	Little	Very little	Not at all
To what extent would you say your overall 'environmentally friendly' behaviour has changed since being back from your shark dive trip in Fiji?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To what extent would you say your opinion of sharks has changed since being back from your shark dive trip in Fiji?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To what extent would you say that the educational information you received on your shark dive trip in Fiji has had a lasting impact on you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please indicate (with a ✓) which of the following you have **done** since being back from your shark diving trip in Fiji:

	YES	NO
More research on sharks (e.g. watched documentaries on sharks, web research, read more about sharks)	<input type="checkbox"/>	<input type="checkbox"/>
Donated money to the conservation of sharks	<input type="checkbox"/>	<input type="checkbox"/>
Joined a shark conservation group	<input type="checkbox"/>	<input type="checkbox"/>
Talked more positively about sharks and/or spread the word about the realities of sharks	<input type="checkbox"/>	<input type="checkbox"/>
Promoted shark diving to others as an opportunity for them to learn more about sharks	<input type="checkbox"/>	<input type="checkbox"/>
More for the environment overall (especially little things like recycling and reducing waste and energy usage)	<input type="checkbox"/>	<input type="checkbox"/>

If you answered **YES** to any of these questions, please explain further:

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#### SECTION 2: Sharks and the 'shark tourist'

3. Please list up to **THREE** words you would use to describe sharks now:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4. Please list anything you remember being told about sharks during your shark diving trip in Fiji, three months ago:

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5. Looking back on your Fiji shark dive trip would you say that those ‘tourists/travellers’ that dive with sharks are unique (i.e. different than other wildlife viewing/nature based tourists):

☐ YES ☐ NO

Whether you answered YES or NO, please explain your answer further:

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6. Please list up to **THREE** words you would use to describe someone who dives with sharks for recreational purposes (i.e. a ‘shark tourist’):

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

7. Now that you have been back from your Fiji shark dive trip for 3 months, please indicate (with a ✓) your level of **agreement** with **EACH** of the following statements:

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
I am afraid of sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoy learning about sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think catching a shark on a rod would be challenging and exciting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Keeping a shark in an aquarium is cruel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks are human-eating machines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks are a very important part of our whole ecosystem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think shark teeth make good souvenirs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like to touch a shark	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think it is acceptable to kill sharks if humans benefit from it (e.g. to help cure diseases)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think all sharks should be legally protected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think human interests, especially safety, should be put before shark interests (e.g. using nets to keep sharks out of waters humans use for swimming)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More marine reserves should be established to protect all sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### SECTION 3: Education and Interpretation

8a. Now that you have been back from your Fiji shark dive trip for about 3 months, how highly would you rank the importance of education/interpretation on a shark dive trip? (i.e. educational information provided by the operator dealing with a variety of topics for example sharks, local culture and other local environmental issues).

☐ Very important ☐ Important ☐ Unsure ☐ Not very important ☐ Not at all important

8b. Please explain further your answer to 8a:

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9. Looking back to your shark dive trip to Fiji, please indicate (with a ✓) how **effective** you felt the dive operator was:

	Very effective	Effective	Unsure	Not very effective	Not at all effective
In your overall learning (especially regarding sharks, Fiji and local environmental issues)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At providing educational information that influenced you to change your behaviour (i.e. in spreading a positive word about sharks and your overall environmentally friendly behaviour)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At increasing your awareness about current issues relating to sharks and/or other environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Please list any recommendations/suggestions you may have 'now' regarding an on-tour education/interpretation programme at the dive site (i.e. effective ways the dive operator can provide educational information to the tourist):

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11. How important would you say 'learning' is to you, on a shark dive trip, 'today' (now that 3 months has passed since your shark dive trip to Fiji)?

☐ Very important    ☐ Important    ☐ Unsure    ☐ Not very important    ☐ Not at all important

#### SECTION 4: Your shark dive experience

12. Are your feelings regarding your overall experience (e.g. emotions and satisfaction) with your dive in Fiji the same today as they were immediately after your shark dive trip?

☐ YES    ☐ NO

Please explain your answer further:

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13. Have you been on any other shark dives since your trip to Fiji?

☐ YES    ☐ NO

If YES where: \_\_\_\_\_

14. Do you plan on taking another shark dive trip in the near future (say in the next couple of years)?

☐ YES    ☐ NO

If YES where do you plan to go: \_\_\_\_\_

15. Would you return to Fiji (specifically to the Pacific Harbour/Beqa areas) for another shark dive trip?

☐ YES    ☐ NO

16. If you were to take another shark diving trip today, would you say that your motivations are the same as they were for your Fiji shark diving trip, taken three months ago?

☐ YES    ☐ NO

Please explain your answer further:

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17. Please list up to **THREE** things that motivate you to choose shark diving as an activity:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

18. Looking back to your Fiji shark dive trip, how would you rank your experience 'today'?

☐ Very good    ☐ Good    ☐ Neutral    ☐ Not very good    ☐ Not good at all

19. Please complete the following sentence:

**For the sake of conserving sharks and the environment I would be willing to:**

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## SECTION 5: Additional comments

20. Looking back to your shark dive trip in Fiji, what would you say was the most valuable thing you gained from your shark diving experience?

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21. Please provide any additional suggestions/comments you feel would benefit this study and or the dive operator:

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22. Please list any areas, within the shark tourism industry, you feel need further research (especially regarding visitor experiences/satisfactions and the educational side of the industry, i.e. the delivery of educational information to the tourist):

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### THANK YOU ☺

Your answers will greatly help this study and hopefully in the conservation of the sharks you have seen in Fiji and with the management of the shark dive site. Your contributions are very much appreciated and very much needed!

Approved by the Auckland University of Technology Ethics Committee on 3 December 2007, AUTECH Reference Number 07/225.

# Participant Information Sheet

## Interviews



**Date Information Sheet Produced:**

23 January 2008

**Project Title: Shark tourism in Fiji: An examination of education and interpretation**

**An Invitation**

As a key individual and stakeholder in the shark diving industry in Fiji, you are a very important part of the overall operations of the industry as well as the Fijian economy. You are invited to participate in this research on shark tourism in Fiji through an interview. Your participation is completely voluntary and you may withdraw at any time without any adverse consequences.

**What is the purpose of this research?**

This research aims to explore the shark tourism industry in Fiji with particular attention being focused on the overall importance of the role of education (i.e. the communication of information from the dive operator to the tourist) to the shark dive industry. This research also aims to gain a better understanding of another crucial element in the overall shark diving industry and that is the *shark tourist*.

This research is being conducted as part of my Doctor of Philosophy at AUT University, Auckland, New Zealand. Results will also be used in journal and conference publications.

**How was I chosen for this invitation?**

I got your contact details from your website on the internet. You are seen as an important contributor and stakeholder in the overall functioning of shark dive tourism here in Fiji and thus your involvement in this research project is very much needed and greatly appreciated. However, please understand that your participation in this study is entirely voluntary.

**What will happen in this research?**

This part of the research involves an interview with you (some other dive operators/key employees in the area will also be interviewed). Other participants in this study include shark tourists, who will be surveyed using an on-tour and follow-up questionnaire and local fishermen, who will be interviewed. Once all data are collected I will analyse them and write up the results and findings in my final thesis and other publications.

**What are the discomforts and risks?**

You are giving your valuable time and information to help with this research and I can assure you that I have considered your well-being. You may be concerned that I will 'leak' confidential or sensitive information to others. You may also be concerned about having different/conflicting views to those held by fishermen.

**How will these discomforts and risks be alleviated?**

All questions are optional, and you may choose not to answer some questions and or terminate your participation in the interview at any time. I am strictly bound by my Universities ethics procedures and processes and will not pass on any information to others or identify you and or your business in any way. I will keep the interview time to a minimum (less than an hour) and I

will ensure that all data (written or otherwise) are stored in a secure place (a lockable filing cabinet in my office), out of reach of others.

### **What are the benefits?**

This research will help paint a clearer overall picture of participants of shark diving in Fiji. It will also help highlight the importance of the role of education at the selected dive sites and how it may assist in the management of the industry and the well-being of shark species in Fiji. Your input will provide an important stakeholder perspective.

### **How will my privacy be protected?**

All answers will be kept confidential and your answers will in no way be linked to your personal details. The results will be presented in aggregate and no individual will be identified in any of the publications relating to this research. I may wish to include quotations from your interview, in my publishings, but I will keep your identity anonymous.

### **What are the costs of participating in this research?**

This interview will take approximately one hour. To thank you for your participation, I offer to send you a brief summary of what I have found (a synopsis of my thesis).

### **What opportunity do I have to consider this invitation?**

Once you have read over this information sheet you can decide whether or not you would like to participate in the study. Also, if at any point you feel you do not wish to continue with the interview, you are free to withdraw your participation from this study.

### **How do I agree to participate in this research?**

To participate in this research, simply confirm an appointment time when I can contact you, via email or telephone. I will also ask you to sign a Consent form (copy attached) that gives me your written consent to participate in the interview.

### **Will I receive feedback on the results of this research?**

The results of this research will be available on [www.nztri.org](http://www.nztri.org) in early 2009 once the study has been completed.

### **What do I do if I have concerns about this research?**

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr Michael Lück: email [mlueck@aut.ac.nz](mailto:mlueck@aut.ac.nz), phone 09 921 9245 ext 5833

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEK, Madeline Banda, [madeline.banda@aut.ac.nz](mailto:madeline.banda@aut.ac.nz), 921 9999 ext 8044.

### **Whom do I contact for further information about this research?**

**Researcher Contact Details:** Roberto Altobelli: email: [rob.altobelli@aut.ac.nz](mailto:rob.altobelli@aut.ac.nz), phone 09 921 9999 ext 6410

**Project Supervisor Contact Details:** Dr Michael Lück: email: [mlueck@aut.ac.nz](mailto:mlueck@aut.ac.nz), phone 09 921 9245 ext 5833

Approved by the Auckland University of Technology Ethics Committee on 3 December 2007, AUTEK Reference number 07/225.

# Consent Form

## Interviews



**Project title:** Shark tourism in Fiji: An examination of education and interpretation

**Project Supervisor:** Michael Lück, PhD

**Researcher:** Roberto Altobelli

- ☐ I have read and understand the information provided about this research project in the Information Sheet dated 23 January 2008.
- ☐ I have had an opportunity to ask questions and to have them answered.
- ☐ I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- ☐ I understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- ☐ If I withdraw, I understand that all relevant information including tapes and transcripts, or parts thereof, will be destroyed.
- ☐ I agree to take part in this research.
- ☐ I wish to receive a copy of the report from the research (please tick one): Yes ☐ No ☐

Participant's signature:

.....

Participant's name:

.....

Participant's Contact Details (if appropriate):

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.....  
.....

Date: .....

*Approved by the Auckland University of Technology Ethics Committee on 3 December 2007, AUTEK Reference number 07/225.*

*Note: The Participant should retain a copy of this form.*

## Appendix F: Interview Questions

# Diving with Sharks in Fiji

## *Dive Operator Interview*

**1. Please describe your overall perspective/opinion of 'sharks' (i.e. their importance to Fijian culture, issues surrounding their conservation and management, tourism and the fishing of them):**

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**2. Please explain how your organisation is upholding the following:**

- Minimising disturbance to wildlife and habitats

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- Increasing appreciation of nature and conservation issues by tourists

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- Maximising the benefits to the local community

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**3. What are your feelings regarding the importance of on-tour education/interpretation? (In other words how important is communicating important information on issues such as shark conservation, Fijian culture, environmental conservation, etc. to your clients?)**

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**4. Please describe in what ways your organisation is using education and interpretation to inform tourist of the important issues surrounding sharks and other environmental and cultural issues:**

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**5. Do you feel that your education/interpretation programme(s) is(are) effective? Please explain:**

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**6. Please describe what you feel are the areas of strength regarding your education/interpretation programme(s):**

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**7. Please describe the areas needing improvement regarding your education/interpretation programme(s):**

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**8. Please describe important management issues facing your operation:**

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**9. Do you believe that education/interpretation, as a tool, is helpful in resolving some of the management issues you may have?**

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**10. Do you believe that education/interpretation is an effective way of increasing your clients' experiences and satisfaction with your overall product? Please explain:**

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**11. How would you describe (overall) the reactions you get, from your clients, to your education/interpretation efforts?**

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**12. Would you (if you are not already) be willing to work together with other stakeholders (in particular local fishermen) in order to better your operation, the local community, the environment and sharks? Please explain either way:**

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