Turning wildlife experiences into conservation action: Can white shark cage-dive tourism influence conservation behaviour?

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Wildlife tourism is often promoted as an activity which supports conservation by enhancing environmental knowledge, attitudes, and behaviour through interpretative messaging and personal experiences with wildlife. Despite these potential linkages, evidence to support such claims is limited. In order for wildlife tourism operators to build a motivated constituency supporting conservation, elements of the tour which contribute to positive attitudes and environmental behaviour must be identified. This study investigated the attitudes and environmental behaviour of 136 wildlife tourists following a white shark cage-dive experience in South Australia. Responses to an online survey revealed a significant increase in participation for seven of the eight conservation-related behaviours explored, and a positive shift in participants’ understanding, awareness, attitudes, and concern for sharks following the tour. Results suggest that emotional engagement during the tour is associated with enhancing participants’ knowledge and attitude towards sharks. Recommendations for complementing the emotional response to viewing wildlife, with interpretative communication, are discussed.

1. Introduction

Wildlife tourism is often promoted as an activity that contributes to conservation by enhancing environmental knowledge, attitudes, and behaviour through interpretative messaging and meaningful first hand experiences with wildlife [12,59,76]. Proponents of wildlife tourism suggest on-site benefits, such as increased understanding or emotional responses to wildlife encounters can lead to off-site benefits including greater environmental awareness and philanthropic support for nature conservation [49,54,59,67,77]. While researchers acknowledge the potential for tourism operators to engender a conservation ethic amongst participants, others suggest tourists’ main motivations are consumption and entertainment, and that assumed increased support for conservation is unwarranted [59,7]. Despite potential linkages between wildlife tourism and change in participants’ attitudes and behaviour, empirical evidence to support such claims is limited [40,59,7].

A review of the learning, attitudinal, and behavioural outcomes from nature-based tourism shows that few studies investigated behaviour directly, with most studies focusing on behavioural intention [7]. Further investigation measuring attitude and behaviour change is required to strengthen understanding of the conditions which facilitate conservation support. Tour operators and managers can then gain understanding of the operational elements which will most likely achieve support for conservation initiatives. Tour programmes may then be modified to emphasise these elements to encourage and reinforce conservation objectives.

Support for conservation can be referred to as environmental stewardship or citizenship. These terms describe the link between individuals’ every day lives and the responsible use and protection of the natural environment through sustainable practices [34,74]. Examples include: talking to others or writing letters to governmental officials about conservation issues, joining or donating money to environmental organisations, and avoiding the use of harmful or unsustainable products [10,40,59,8]. Three key themes are noted in the development of marine citizenship: marine education, personal attachment to the marine environment, and a sense of responsibility for the condition and management of the marine environment [52]. An increase in marine information availability and education is considered to stimulate high levels of concern for the marine environment to ultimately inspire a sense of marine citizenship [52]. For example, learning was a major outcome of the sea turtle viewing experience at Mon Repos, Australia, and was found to foster positive conservation values and visitor
behaviour [67–69]. People with more knowledge about sharks have also shown to be more supportive towards the species and their conservation [56].

Environmental education seeks to foster attitudes and behaviour towards environmental protection by transmitting and accumulating knowledge [72]. Many tourism experiences attempt to do this by combining participation in the experience with conservation-themed interpretation [11]. The intention is to increase tourists understanding of environmental issues thereby influencing participants to adopt conservation practices beyond the specific tourist experience [13,40,59,71].

Behaviour is based on intentions, attitudes and underlying beliefs, and will vary from individual to individual [1–3]. Unless information targets these underlying beliefs, it is doubtful an individual’s attitude or behaviour will be impacted [36]. The failure of information-based programmes aiming to foster behaviour change is due partly to the difficulty of changing behaviour [51]. Barriers and drivers influencing behaviour change include environmental factors, skills and abilities, personality, mood and emotions, past behaviour, demography, and culture [31,32]. Therefore, stimulating long-term behaviour change may be more complicated than merely increasing knowledge.

The duration of wildlife tours usually allows a brief window for interpretive communication. It may be unrealistic to expect strong and enduring attitude changes during this short time [35]. However, changes in tourists’ values and attitudes towards conservation after one day at an elephant park determined that even a brief communication opportunity could result in value and attitude change [60]. Certain species, such as elephants may, however, be more emotionally appealing than other species, such as white sharks. Therefore, the ability of the wildlife experience to engender a conservation ethic amongst tourists may differ between species.

Stimulating a conservation ethic among participants is likely to require an integration of the emotional benefits of seeing unique wildlife with the educational benefits of learning new facts [77]. Human encounters with wildlife can have strong emotional and psychological impacts on participants [22,26,40,41]. Direct exposure and emotional connection to wildlife can stimulate concern for a species and motivate pro-conservation behaviours [12,40,63]. To increase the likelihood of fostering conservation attitudes and behaviour amongst participants, researchers suggest operators capitalise on the emotional affinity between participants and the animals they observe and allow time for a reflective response [12]. The role of emotional engagement in wildlife tourism has been investigated in various studies. Surveys of marine wildlife tourists by Ballantyne et al. [8] indicated that changes in visitors environmental knowledge, attitudes, can be improved by encouraging tourists to emotionally connect with the animals they are observing. In a study of families at a marine turtle tourism site, Hughes [40] found visitors were more likely to express an intention to adopt pro-conservation practices if they were emotionally engaged in the encounter. Jacobs and Harms [45] research into the conservation intentions of tourists following a whale watching tour found interpretation which evoked emotion, was more likely to foster conservation intentions than interpretation which focused on knowledge or responsibility. In an attempt to optimise the conservation potential of wildlife tourism these studies, and others [12,77], confirm that an emotional response to wildlife is an important element of the tourist experience.

1.1. Shark-based tourism and conservation

Charismatic megafauna such as dolphins and whales are often the focus of marine wildlife tourism. These animals are often referred to as ‘flagship species’ and promoted as a rallying point for conservationists [63]. While sharks are not generally seen as flagship species, the decline in global shark populations is a significant conservation issue that warrants immediate attention [28]. The traditional negative image of sharks has often resulted in insufficient public support, and acted as an obstacle for shark species to receive proper management priority and conservation they require [4,70]. However, public attitudes towards sharks have begun to change, with an increased level of interest and awareness of the scale of threats to global shark populations [55,62,73]. In particular, change in public perception has been realised amongst the marine tourism industry [70,73]. Once considered a disadvantage to coastal tourism [39], sharks are now considered an important attraction at dive sites around the world [43,46,70]. Exposing tourists to sharks in their natural environment has considerable potential to enhance participant’s knowledge, attitudes, and behaviour towards sharks and their conservation [26,70].

Shark-based tourism has seen an increase in academic attention and is an important niche sector in the rapidly developing marine tourism market [18]. Research on the effects of tourism on sharks is on the rise with studies investigating the physiological impacts of provisioning [48], changes in seasonality, residency or abundance [14,16,53], changes in spatial use [21,44], changes in vertical activity [33,44], physical effects from divers [65] and the economic value of shark tourism [42]. However, the social dimensions of shark-diving, such as the potential for conservation outcomes remain unclear. The unprecedented pressure from global shark fisheries [28,75] and the rapid growth of the shark tourism industry [19,20,24] highlights the necessity for shark-based tourism to emphasise conservation and ensure the longevity and sustainability of both the industry and the species [17,25,26,70]. The findings reported in this paper make a significant contribution to understanding elements of the wildlife tourism experience associated with engendering pro-conservation behaviour with sharks.

1.2. Research context: white shark cage-diving at the Neptune Islands

White shark cage-dive tourism has become a popular recreational activity, which exists in only a few countries where these sharks can be reliably observed [27,46]. The present study focuses on the Neptune Islands, South Australia, where cage-dive tours have been conducted since the late 1970’s. This site has seen an increase in cage-diving effort since 2007, with the mean annual number of days rising from 124 days (2000–2006) to 265 days (2008–2011) [15]. This sustained and rapid increase in activities coincided with a change from multi-day irregular timed trips to regular day trips operations [15]. Currently, there are three licenced operators, with two offering day trip operations (approximately 12 h in duration) and one offering multi-day tours (2–10 days). Tours operate 260 days a year (weather permitting) with participants boarding vessels from the Port Lincoln marina. Once at the Neptune Islands, participants can view sharks from inside a custom-built cage, from the deck of the vessel or on one vessel from a submersible viewing platform. During the tour, tourists are encouraged to ask questions with information predominantly focused on shark-related facts and stories, and identification of individual sharks. Interpretation does not specifically include a call for action, conservation messages, or suggestions for pro-conservation actions.

If wildlife tourism is to foster understanding of conservation, engage pro-conservation attitudes, or encourage visitors to become personally involved in conservation initiatives, visitor research is needed to inform the design and delivery of a tourism experience that continues to attract and inspire visitors. The present study aimed to investigate the potential for a white shark cage-dive experience to prompt tourists to increase shark conservation behaviour. The study was guided by three research questions:

1. Does cage-diving positively enhance participant’s awareness, understanding and concern for sharks and their conservation?
2. Does conservation behaviour towards sharks increase post-experience?
3. Are perception of tour quality, knowledge gain, and emotional
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