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Whale watching in Sri Lanka: Perceptions of sustainability

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ABSTRACT

Whale watching creates an economic value for whales beyond consumption and therefore assists in the conservation of the species. However sustainable management is needed to avoid deleterious impacts on the whales and the industry. This paper uses a range of qualitative methods to examine the characteristics, management and perceived sustainability of the relatively newly established whale watching industry in Sri Lanka. It is clear that the laissez faire development of the industry has resulted in some poor conservation outcomes for the whales as well as variable tourist experiences. The Sri Lankan government has introduced legislated regulations aimed at managing the industry however it must ensure adequate human and financial resources are provided to ensure the effective implementation of the regulations and therefore the sustainability of the industry.

1. Introduction

Wildlife tourism, of which whale watching is an important component, is seen as a way to promote the conservation of various species through raising tourist awareness on conservation issues and by generating economic benefits (Mustika, Birtles, Welters, & Marsh, 2012; Tisdell & Wilson, 2001). Whale watching, since its beginnings in the mid-1960s, has grown into a global industry that provides substantial economic benefits to over 70 countries that provide viewing opportunities (O'Connor, Campbell, Cortez, & Knowles, 2009). These opportunities, by promoting conservation, can assist in ameliorating the impacts of commercial whaling that resulted in the decline of many whale populations (Cisneros-Montemayor, Sumaila, Kaschner, & Pauly, 2010).

While the growth of the industry has provided many conservation and economic benefits there are also concerns that the poor management of tourism may be resulting in negative impacts on whales including changes in vocalisation and respiration patterns, surfacing and swimming behaviour, feeding times and group size (Higham, Bejder, & Lusseau, 2009; Parsons, 2012). These negative impacts not only have a detrimental impact on whale populations they also threaten the sustainability of the industry. In order to address these negative impacts (as well as improve visitor satisfaction and safety) a number of destinations have introduced guidelines and/or codes of conducts aimed at ensuring the sustainable management of the industry (Cole, 2007; Garrod & Fennell, 2004; Parsons, 2012).

Effective guidelines and management strategies are important since they help ensure that tourism development does not result in negative environmental outcomes, loss of amenity, reduced demand for the tourism product and reduced economic benefits accruing to local communities (Parsons, 2012). However, Cressey (2014) asserts that guidelines are often inadequate. In addition, the adoption of unsustainable practices has often been encouraged because of the political and economic pressure to attain short-term benefits from tourism at the expense of delayed environmental impacts (Buultjens, Ratnayake, Gnanapala, & Aslam, 2005).

Sri Lanka is a developing country that has recently experienced a relatively rapid development in its whale watching industry. Since 2008, numbers have increased from an estimated 620 tour participants (O'Connor et al., 2009) to nearly 80,000 in 2014 (Coast guard representative 15, personal communication). The purpose of this paper is to provide an overview of the development and characteristics of the industry, its management as well as stakeholder and visitor perceptions of the industry's sustainability. This study has a particular focus on the industry situated in Mirissa due to the low level of development in the two other whale watching sites located in Trincomalee and Kalpitiya. This study is important since empirical research on whale watching is critical if the growth and carrying capacity of the whale-watching industry are to be understood properly (Higham et al., 2009). This is especially true for a country like Sri Lanka where the tourism industry is expanding rapidly and whale watching is in its infancy. Hopefully the findings discussed in this paper will provide valuable insights that can contribute positively towards the management of whale watching tourism in the country.

This paper begins by presenting an overview of whale watching and effective management regimes adopted at different locations around the world. This is followed by a description of the Sri Lankan tourism industry. The next section provides a description of the methodology used in this study followed by a description of the whale watching industry

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and the perceived tourism impacts associated with its development. This is followed by a discussion and the conclusion to the paper.

2. Whale watching

Wildlife tourism, including whale watching, is a specialised and highly important component of the tourism industry (Higginbottom, 2004). It can involve encounters with non-domesticated (non-human) animals in either a natural environment or in captivity (Higginbottom, 2004). Properly managed wildlife tourism, by creating economic value, provides an incentive for the protection of wildlife and the environment. It can also enhance a destination's appeal and visitor experience (Ballantyne, Packer, & Sutherland, 2011). The failure to provide effective sustainable management can potentially result in serious problems to arise including the injury or death of wildlife, habitat alteration and the modification of natural behaviour (Banerjee, 2012).

Whale watching, a sub-category of wildlife tourism, is defined as "tours by boat, air or from land, formal or informal, with at least some commercial aspect, to see, swim with, and/or listen to any of the … species of whales, dolphins and porpoises" (Hoyt, 2001: p. 3). It began in Massachusetts in the 1960s and has since grown into a substantial global industry. The value of whale watching is multi-fold. Firstly, it creates an economic value for whales beyond consumption through injecting tourism revenue into local economies. Secondly, whale watching is valued for its contribution to environmental education and scientific research (Lambert, Hunter, Pierce, & MacLeod, 2010). It also assists in changing peoples' perspectives on the use of whales for tourism opportunities rather than for food. The change in perspective of usefulness in anthropocentric terms is considered crucial to whale species' long term recovery. This is especially important since most whale species worldwide have been recovering from the brink of extinction since 1986 when the International Whaling Commission declared a 10 year moratorium on whaling (Chen, 2011).

The substantial economic benefits from whale watching can play an important role in assisting in the recovery of the species. For example, in 1998 the industry was estimated to generate over US$1 billion p.a. with over 9 million whale watchers in 87 countries and territories (Hoyt, 2001). Within ten years the industry had grown to generate a total expenditure of US$2.1 billion p.a., with 13 million people participating across 119 territories and countries in 2008 (O'Connor et al., 2009). Furthermore there are approximately 3300 operators offering whale watching trips globally, employing an estimated 13,200 people. In Asia, where whale watching has emerged as the world's important new destination, the number of whale watchers has grown from 220,000 in 1998 to over 1 million in 2008; expanding from 13 countries offering whale watching activities in 1998 to 20 in 2008 (O'Connor et al., 2009). At a local level it is estimated that the average number of operators per community is four and the number of direct jobs per whale watching operator is seven (Cisneros-Montemayor & Sumaila, 2010).

These substantial income and employment benefits, especially for developing countries, are likely to increase as long as the industry is managed sustainably at a destination level. Unfortunately this may not be the case in all destinations and this will have significant impacts on whale populations. Whale behaviours can be affected when there are too many boats or when the boats approach too close to the cetacean. However, it is often difficult to establish the long-term negative consequences of these short-term behavioural changes (Parsons, 2012). The behavioural changes induced by tourism activity can include modifications in swimming behaviour, travelling direction, travelling path, travelling speed, group size and coordination, feeding time, surfacing intervals, and displacement from the disturbance area (Chen, 2011; Higham et al., 2009; Parsons, 2012; Weinrich & Corbelli, 2009). Longer term impacts can include chronic levels of stress resulting in negative effects on health as well as reduced reproductive rates (Orams, 2004; Parsons, 2012). In addition whales can also be killed or injured as a result of collisions with whale-watching vessels, especially in areas where there is a high intensity of whale watching traffic. The speed of the vessels also contributes to collisions (International Whaling Commission, 2003).

The negative impacts from whale watching have encouraged many countries and states to introduce different laws, guidelines and codes to manage the industry (Cole, 2007; Garrod & Fennell, 2004; Parsons, 2012). The introduction of guidelines and/or regulations has been the most common method of trying to mitigate the impacts of tour boat whale-watching (Parsons, 2012). However, there are no internationally binding laws regarding whale watching despite the International Whaling Commission considering the legal aspects of whale watching including 'model' legislation from around the world (O'Connor et al., 2009). In general most whale watching guidelines are entirely voluntary while approximately one-third are regulatory or 'legal' (Garrod & Fennell, 2004).

Most guidelines attempt to prevent vessels from 'harassing animals' and/or striking whales, and include features such as minimum approach distances, speed zones, buffer zones, approach angles, noise controls and spatial or temporal 'refuges' (Australian Government Department of the Environment and Heritage, 2006; Parsons, 2012; Wiley, Moller, Pace, & Carlson, 2008). These measures are expected to protect whales and the valuable industry that develops around them. Despite the existence of guidelines many do not curtail invasive activities such chasing whales because they do not include a comprehensive set of expected behaviours (Garrod & Fennell, 2004). Parsons (2012) also notes that the existence of guidelines, regulations, or laws is often not complied with due to poor compliance and monitoring as well as a chronic lack of enforcement. The lack of monitoring and enforcement arises from various reasons including a lack of resources, logistic support, capacity and will (Parsons, 2012). Voluntary codes of conduct, which are often seen as 'soft' visitor management tools (Cole, 2007), are "enforced primarily by ethical obligation and peer pressure" (Garrod & Fennell, 2004; p. 339).

In addition to the provision of guidelines it is becoming increasingly accepted that education and interpretation are important components of a satisfying tourism experience, especially those occurring in the natural environment and involving wildlife (Luck, 2003). Education/interpretation provided on-board whale-watching vessels is likely to be viewed as an important part of the tour (see Mayes & Richins, 2008) as well as increasing customer satisfaction (Parsons, Warburton, Woods-Ballard, Hughes, & Johnston, 2003). Moscardo and Saltzer (2005, p.8) note that "there is a substantial correlation between the amount visitors believed they learnt about the wildlife during their visit and their overall satisfaction with the wildlife experience". An equally important outcome from education/interpretation is that it can help reduce the negative impacts on whales (Newsome, Moore, & Dowling, 2002). Bentz, Rodrigues, Dearden, Calado, and Lopes (2015) also note that overcrowding can also reduce visitor satisfaction.

Another method for managing the impacts of whale watching is to limit the number of licences issued to operators (Kessler & Harcourt, 2013). The selection process used to determine the allocation of licences could be utilised to ensure reputable operators gain the licences.

3. Tourism in Sri Lanka

The potential of tourism to contribute to the country's economic development was initially articulated in 1960s with the release of the first Tourism Management Plan in 1967 (Ceylon Tourist Board, 1968). After the release of the Plan the industry experienced considerable growth in international visitation during the 1970s however with the commencement of the Civil War in 1983 numbers stagnated at between 400,000 and 500,000 visitors (Sri Lankan Tourism Development Authority, n.d.). In addition to the stagnation there were some substantial declines experienced in the aftermath of various serious terrorist events. Since the war ended in 2009 international visitation has increased rapidly from 447,890 in 2009 to 1.5 million visitors in

2014 (Sri Lankan Tourism Development Authority, n.d.). This rapid increase in visitation has put serious pressure on tourism infrastructure as well as the environment and wildlife (Buultjens, Ratnayake, & Gnanapala, 2015a, 2015b), including whales (SriLankan Airlines, 2012). This pressure on whales is likely to continue since the level of whale watching in a country is significantly related to the size of its overall tourism industry (Cisneros-Montemayor et al., 2010).

Initially the tourism industry was almost exclusively focused on the mass international 'sea, sun and sand' market based on the south and west coast as well as the centrally located cultural triangle. Both these destinations were relatively sheltered from the War. Consequently tourism and economic development in general was markedly affected in the northern and eastern regions. Other tourism markets including nature-based, eco and wildlife have been relatively undeveloped however there is an increasing awareness amongst government and private-sector organisations that these are important market segments that can provide substantial benefits with minimum impacts (Buultjens et al., 2015a, 2015b). For example, the Refreshingly Sri Lanka — Visit 2011 marketing campaign by Sri Lanka Tourism promoted twelve experiences, one of which was nature and wildlife. This marketing initiative was supported by tourism policy aimed at developing these experiences (EML Consultants, 2012). Based on evidence elsewhere, the development of these markets, including whale watching, can be expected to provide added value to tourism in the country (Cisneros-Montemayor et al., 2010).

Despite the relative lack of development of the wildlife market, a number of international and domestic tourists are interested in viewing wildlife, especially elephants, in their natural habitat. As a result of this interest many tourists visit national parks in the country. Unfortunately many of these areas are not managed effectively for a variety of reasons (Buultjens et al., 2005).

4. Methods

The study reported in this paper used a range of qualitative methods consisting of document analysis, semi-structured interviews, active participant observation and secondary data obtained from online media. The use of these various sources of data allowed for triangulation that enabled the researchers to examine where the data converged and, in turn, provide credibility for the findings (Bowen, 2009; Denzin, 2006). The document analysis involved a review of the literature and documents relating to the administration and visitor management in whale watching in Sri Lanka. The data sources included government policy documents, government media releases, peer-reviewed academic journals and books, and commentary from a range of websites. The authors were aware that the documents used could vary in terms of the quality of the data used (Bowen, 2009; Rosenberger & Stanley, 2006) however the use of other research sources helped to substantiate the documentary data.

In addition to the document analysis, 23 semi-structured personal interviews were undertaken in July 2012, November 2012 and April 2013 with a range of stakeholders. The 'saturation' criterion determined the sample size for this study (Patton, 1990). Interviews are a widely used research method that allows for the exploration of ideas and meanings (Qu & Dumay, 2011). The stakeholders interviewed included members of the Department of Wildlife Conservation (DWLC), members of the Sri Lankan Navy and Coast Guard, academics, representatives from the private sector in the Sri Lankan tourism industry, including from peak organisations, inbound tour operators, whale watching boat operators as well as various representatives from conservation groups.

Interview participants were selected via a non-random, convenience and snowball sampling method (Kitchenham & Pfleeger, 2002; Coyne, 1997; Patton, 1990) where appropriate interview participants were identified by other participants. The researchers had some contacts that were approached initially and then they followed up with other contacts from the networks of the initial participants. This non-probability sample was used because it was relatively easy to determine appropriate respondents however it is important to note that the participants cannot be considered to representative of a target population. Caution needs to be applied in making statistical inferences from this sample (Kitchenham & Pfleeger, 2002).

The interviews were guided by a set of pre-determined questions about the Sri Lankan whale watching however there was considerable scope for the exploration of ideas. The interview participants were asked their views on how important they felt whale watching was to the tourism industry; the ability of the industry to expand; the current sustainability of the industry; and its contribution to regional development and employment creation. In discussing the sustainability of the industry, participants were asked to discuss the issues facing the industry, the effectiveness of the current management regime as well as how best to improve management of the industry. Content analysis was conducted using NVivo (2010) using themes identified by researchers.

The active participant observation was used to collect primary data to enable an increased understanding of the behaviour of the operators and their staff (Podoshen, 2013) and also allowed the authors to determine the accuracy of the information gained in document analysis and interviews. The researchers participated in five tours with five different operators from Mirissa during July 2012 and November 2012. Prior to the undertaking tours the researchers did not alert the tour operators or their staff to the research project. Covert observation, while widely used, does raise ethical considerations however in this case it was considered that the findings would not result in any adverse outcomes for the research participants and that the purposes of the research would not be undermined (Oliver & Eales, 2008).

The participant observations were recorded immediately after the tour had been completed since it was not practicable to be record them during the tour. The delay in recording the notes and the fact "that reality is constructed and as such, reality and truth are coproduced by the researcher and the participants being investigated" (Kwek & Lee, 2013; p. 305) means that findings need to be treated with caution. However its use with the other sources of data provides more confidence in the observations.

Finally, the content analysis of Internet-based information about whale watching in Sri Lanka was conducted in two periods. The first was in October and November 2012 and the second was June and July 2014 using the key words 'whale watching in Sri Lanka', 'Sri Lankan whale watching' and 'whale watching tourism in Sri Lanka' within a Google search.

The top ten ranked website results from each keyword search were then recorded and analysed. Using thematic coding, each result was categorised as: Tour operators or tourism industry websites; privately owned or community websites; destination review or trip advisory websites where individuals could post blogs or comments about a destination; and private blogs containing unsolicited travel information from past experiences of whale watching in Sri Lanka. Approval to use comments was not sought since the comments are already in the public domain. The use of four qualitative sources provided a high level of confidence in the results from the study.

5. Findings

5.1. Whale watching in Sri Lanka

Three locations in Sri Lanka offer opportunities for whale watching. These are Mirissa in the south-west, Trincomalee in the north-east and Kalpitiya on the west coast. In addition, a large navy boat leaves from Galle; a town located 34 km north from Mirissa. The two species of whales in these locations are the blue (*Balaenoptera musculus*) and sperm whale (*Physeter macrocephalus*). The blue whale is classified as endangered with an estimated 5000 to 10,000 blue whales remaining worldwide. Unlike blue whale populations in other parts of the world,

those in the Northern Indian Ocean do not appear to migrate beyond this single ocean basin (Anver, 2012; de Vos, Christiansen, Harcourt, & Pattiaratchi, 2013). Sperm whales are currently listed as a vulnerable species and are protected by a whaling moratorium (Fig. 1).

The history of whale watching in Sri Lanka dates back to 1983 with small scale operators departing from Trincomalee, however development was constrained by the on-going civil war in the region. The limited development of the industry meant there were few benefits for the local community (Hoyt, 2001). The next phase of the industry's development began in 2008 at Mirissa after sightings of blue and sperm whales close to the shore in the previous year (Tour company representative 4, personal communication; Anver, 2012). Since 2008, there has been a rapid and substantial increase in whale watching at this site (Williams, 2013b). This growth has occurred to a large extent because the tourism industry is well-established in the region with a number of large resorts and popular beaches located in close proximity. In addition, tourism in the region was largely unaffected during the war and has rapidly increased since it finished.

The ending of the war is expected to also facilitate the future development of the sector in Trincomalee (Buultjens et al., 2015a). This development will be assisted through increased visitation to the region as well as the government's commitment to developing tourism in the northern and eastern regions of the country. The government has also identified Kalpitiya, a relatively undeveloped tourism destination on the west coast, for substantial tourism development, including whale and dolphin watching (Tjolle, 2011). In 2012, this site lacked the required accommodation and infrastructure necessary to cater for large number of tourists (In-bound tour operator 12, personal communication) and is “a rather wind-blown and unfriendly place” (Tourism Representative 18, personal communication). However, like Trincomalee, Kalpitiya is expected to provide substantially increased opportunities into the future as the country's tourism industry expands.

The existence of whales at these three locations means that there are whale watching opportunities available all year. For example, due to the prevailing weather patterns in Mirissa and Kalpitiya the prime viewing period is between November and April, while May to October are the

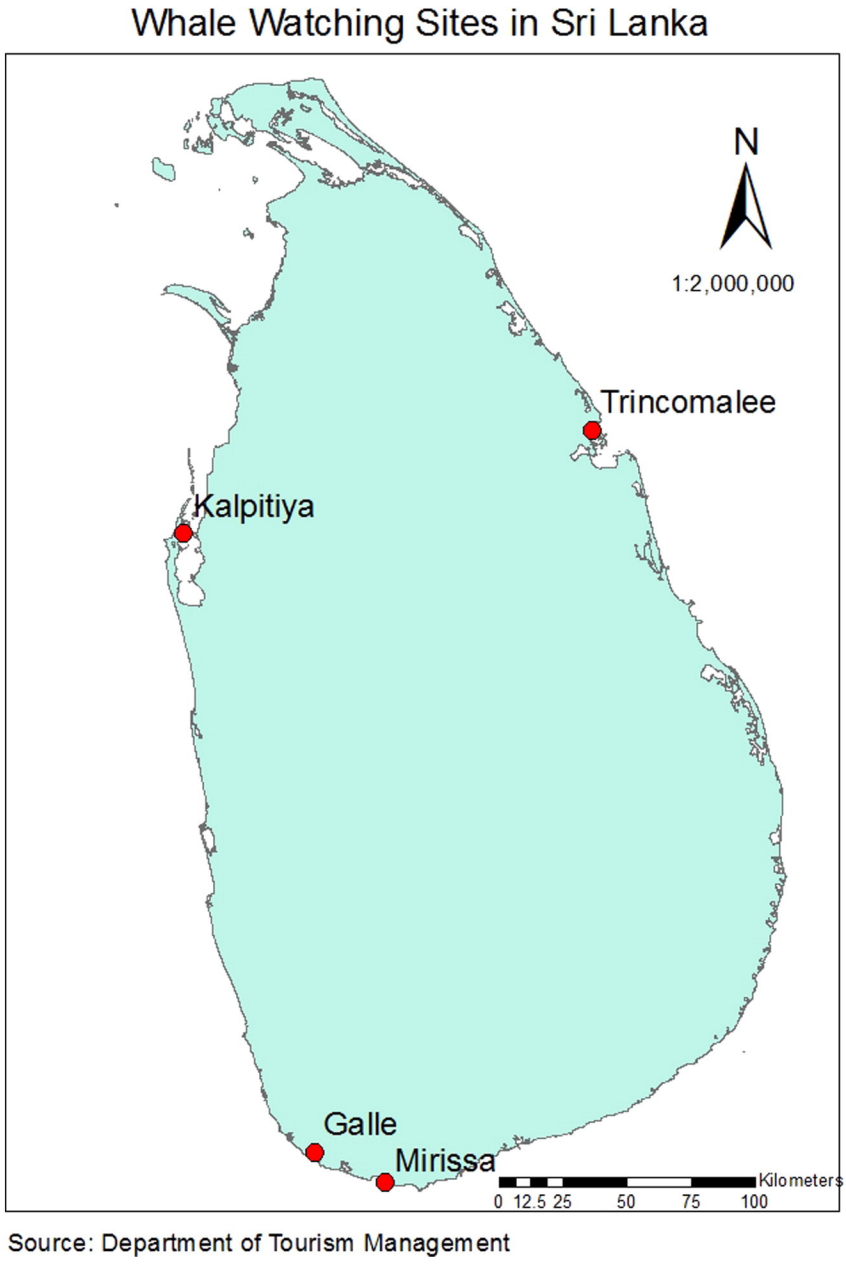

Fig. 1. Map of Sri Lanka and whale watching sites.

best months in Trincomalee. Currently some boat operators, including the Navy, move their boats between Mirissa and Trincomalee.

5.1.1. Value adding to tourism

In addition to providing a year-round tourism experience the expansion of whale watching has contributed substantial value-adding to the existing land-based terrestrial wildlife attractions. The whales are seen as giving Sri Lanka a competitive advantage over similar destinations such as India and allows the country to provide viewing of "a diversity of large and charismatic animals during a short 1-2 week tour… Sri Lanka is also promoting its own Big Five which includes the blue whale, sperm whale, leopard, sloth bear and Asian elephant" (Inbound tour company representative 4, personal communication). "A major attract – becoming the new fad for promoting Sri Lanka. Now marketing to clients in coastal areas [sic]" (Tour boat operator 9, personal communication). The whales have become such an important attraction that some companies are bringing tourists just for whale watching tours (In-bound tour operator 2, personal communication).

The expansion of the whale watching industry is unsurprising given its popularity in other destinations around the world (O'Connor et al., 2009; Williams, 2013b). As stated above, Mirissa, due to its proximity to large numbers of tourists, has experienced substantial and rapid growth. In Mirissa in 2008, two well-known operators began to run larger boats focusing predominantly on blue and sperm whales. At the same time many local fishers started to convert their rudimentary fishing boats to tour boats of varying standards (Williams, 2013b). The two large operators focused mainly on the international market, whilst, initially, the other operators focused more on the dolphin watching market consisting mainly of local clientele (approximately 80% Sri Lankan) (O'Connor et al., 2009). The small tour operators' services were irregular and/or minimal. It was estimated 620 people participated in whale watching in 2008 and that they contributed a total expenditure of US $51,200 (O'Connor et al., 2009). The total employment in the Sri Lankan whale watching industry in 2008 was estimated to be just eight people (O'Connor et al., 2009), however an average annual growth rate of 9.5% was expected to result in many more jobs. In 2012, the small tour operators were also heavily dependent on the international market with over 90% of tour participants from overseas (Coast guard representative 15, personal communication).

In 2012, the industry had clearly expanded but the laisse-faire nature of the industry's expansion meant it was difficult to determine the number of boats or number of visitors. No formal records were kept in 2012 and for most of 2013 while the figures for 2014 may not be completely accurate. In 2012, it was estimated that there were 11 boats operators from Mirissa who catered for 15,000 tourists (Coast guard representative 15, personal communication). Other people provided a range of estimates. For example, an in-bound tour company representative (4, personal communication) suggested there were around 15 boats leaving Mirissa Harbour and catering for 10,000 visitors per annum. He noted that this enabled "the local community and the hoteliers around the area to benefit from a thriving whale watching industry". A tour boat operator (2, personal communication) estimated that there were 20 boats leaving Mirissa and that "a number of fishing boats have been converted and many others are being converted… they are uncomfortable seating and very bumpy [sic]." The uncertainty about the number of boats leaving Mirissa underlines the need for a more effective method of maintaining records. In addition to the boats based at Mirissa, the Navy ran a large passenger ship from Galle Port, 34 km away.

In 2013, it was estimated that between September and December in Mirissa up to 30 boats catered for 17,925 tourists of which approximately 93% were foreigners and 7% local. In 2014, 34 boats catered for 79,219 tourists departing from Mirissa Approximately 94% of customers were international visitors. The number of whale watchers leaving on the ex-navy vessel from Galle is estimated to have been about 7000 per annum in 2012, 2013 and 2014 (Coast guard representative 15, personal communication).

The relatively rapid growth of the industry has been made possible because only a small investment is required in the first instance (see Cisneros-Montemayor et al., 2010). For example, many local fishers, who are already familiar with the area, have converted (or are converting) their fishing boats into tour boats (Tour boat operator 2, personal communication). The fishers have been attracted into the industry because it offers a desirable alternative income for fishers (Academic 1, personal communication). The involvement of local fishers provides an increased livelihood base for communities and ensures a contribution to local economic development.

Tour operators require a licence from Coast Guard and DWLC — the organisations responsible for managing the industry in early-2012. The field work and the interviews seemed to suggest there were no limits on the number of boats going out. Most boats left Mirissa in the early morning at approximately the same time. Water, breakfast and life jackets were provided to passengers. The boats could be out for between 3 and 5 hours and some up to eight hours depending on the sighting of whales; this time is highly variable as will be discussed later. The boats, except the Navy boat, generally have approximately 5 to 6 crew including a captain and a life guard. Some boats also had a 'tour guide'. The boats took between 20 and 50 passengers while the Navy boat catered for 300 predominantly local passengers. According to a tour boat operator the Navy boat provides "very poor viewing" due to the large number of passengers (2, personal communication). Most operators charged between US$50–100, except for the Navy boat which charged SLR3500 (US$26) for domestic adult tourists and US$60 for adult international tourists. The boats, except the Navy boat, travelled anywhere between 4 and 40 nautical miles to find whales (Academic 1, personal communication).

5.2. Whale watching management and impacts

The rapid expansion of the industry in Mirissa has put significant strain on the whales and resulted in varied tourism experiences (Academic 11, personal communication). As noted by SriLankan Airlines (2012), who formed a partnership with Whale and Dolphin Conservation UK to improve the management of the industry, "…these beautiful creatures are increasingly threatened and endangered by a combination of irresponsible, unregulated whale watching and ship strikes".

In response to the industry's growth the government introduced *the Sea Mammals* (*Observation*, *Regulation and Control*) *Regulations* (Regulations hereafter) in 2012. A need for regulations was recognised by most stakeholders and after much discussion between the DWLC, researchers, boat operators and hoteliers the Regulations were drafted. The effectiveness of the Regulations will depend on the DWLC having the required expertise and finance. The Regulations are "intended to ensure to the greatest extent, possible, the peaceful and natural existence of all sea mammals whose natural habitat is within the territorial waters of Sri Lanka and assist to regulate and control vessels used by visitors for the purpose of observing such sea animals" (Government of Sri Lanka, 2012: 1A).

As a part of the legally protected wild fauna of Sri Lanka, whales and dolphins come under the protection of the DWLC (Ilangakoon, 2009) however, until mid-2012 the Coast Guard had responsibility for managing the boats and recording the tourist numbers on the boats. This responsibility has been passed on to the DWLC. The introduction of the Regulations requires tourist boat operators to obtain a licence from the DWLC and pay an annual fee of 5000 rupees (approx. US$40). Operators will need to provide evidence of vehicle sea worthiness, full insurance and adequate safety equipment. The Regulations also require operators to make passengers aware of the need for conservation measures and the restrictions that apply to them before they commence the trip. The DWLC is to prepare the printed material containing the restrictions. In addition every boat will have to have on-board a guide who has

been trained and is registered by the DWLC. The Regulations also specify vehicle speed and viewing distances as well as prohibiting tours from taking place in inclement weather.

5.2.1. Perceptions of overcrowding

In 2012, the absence of an effective management regime had resulted in some serious problems for the industry in Mirissa. It is very likely that these problems will arise at the other two sites as whale watching increases. One in-bound representative suggests a solution would be to have "few larger boats with greater visitor carrying capacity and better safety features … used [instead] of the currently only small 6-seater boats" (Tour company representative 4, personal communication).

In Mirissa a major issue is the lack of an official limit on the number of vehicles servicing the industry. In addition there are major concerns with the behaviour of some boat captains and their crews at sea. It appears the lack of control on the number of boats and the behaviour of some has resulted in the social and environmental carrying capacities being very close to, if not already, exceeded (Peak tourism representative 20, personal communication; Williams, 2013a, 2013b). At the time of the research the intention was that all boats would be relicensed if they met the requirements of their licence (Government representative 23, personal communication).

The lack of control on the number of boats and behaviour reduces visitor satisfaction but more importantly is likely to have deleterious impacts on the whales.[1] "If no controls are put in place on the boat numbers operating, there could soon be 35–50 boats taking visitors out daily … which is unsustainable and seriously threatens to compromise the quality of the experience" (Inbound tour company representative 4, personal communication). For example, when there is a sighting of a whale, a number of vehicles rush to and congregate where the animal is sighted. In their desire to reach the sighting the vehicles often travel at high speeds (Ilangakoon, 2009; Williams, 2013a; Personal observation). One of the researchers on a trip in especially rough conditions felt very unsafe as the boat travelled at high speeds chasing whales. With the congregation of vehicles, there is also on pressure on the captain to push closer to an animal to gain the 'best' view for the passengers. This problem is experienced in number of other countries (Ilangakoon, 2009; Williams, 2013a). Not only do some of the boats encroach upon the whales they also chase them at high speed after they submerge and then surface to breathe again (Ilangakoon, 2009; Personal observation). On one trip attended by a researcher up to six boats chased a whale and its young calf; probably resulting in severe stress for both. On another trip a commentator noted that "[A]ll the other commercial whale watch boats, regardless of their size and who was operating them, were harassing the whale throughout this encounter making it change its natural behaviour due to the stress they were causing it" (Ilangakoon, 2009). She goes on to note that the "… boat attempted to get right on top of the whale to get the tourists within touching distance of it, making the whale dive hurriedly to get out of the way". This also happened on some of the trips attended by the researchers where the boats drove over pods of dolphins. Even more worryingly an Academic had this observation:

> *I was on a boat … When they were chasing the dolphins I told them just to stop and idle the boat. Soon the dolphins came near the boat. I was shocked to see one of the crew with a harpoon. I stopped him – he was trying to harpoon one of the dolphins so the passengers could get a better look at it* (Academic 1, personal communication).

It appears that "the [some] operators and crew have little understanding of their impact on whales" (Academic 8, personal communication; also personal observation) while others are clearly very conscious of the possible impacts of their actions (Personal observation).

5.2.2. Perceived impacts on whales

The stress caused by overcrowding and inappropriate behaviour of operators threatens the sustainability of the industry. The continuing presence of boats can influence breeding patterns, feeding behaviour and other social interactions (Warburton, 1999). Another consequence is that whales may be forced to move (Dixon, 2012). As a Tour operator noted (14, personal communication) "Not want too many boats because whales may go away because of too many boats [sic]". The possible movement of whales is especially important in Mirissa since "one of the most heavily trafficked shipping routes in the world is 15 miles off the southern coast of Sri Lanka. This is the major channel for ships headed to the Indian Ocean" (Dixon, 2012; see also Anver, 2012; de Vos et al., 2013). Whales in this channel are at risk of being killed by collisions with large container vessels that use the shipping lanes. Each year around 4–5 blue whales are killed by ship strikes (Inbound tour company representative 4, personal communication). In 2011, "an unprecedented … twenty whale carcasses (not all … blue whales) were seen around the island... But researchers say the number of blue whales struck could be ten to twenty times more – since blue whales often sink soon after they are struck" (Dixon, 2012). Unfortunately it appears that the aggressive pursuit of whales by tour operators is "chasing the whales into the paths of the ships" (Academic 1, personal communications). There is concerns also that noise from boats especially the large Navy boat's engine will disturb the whales (Tour operator 14, personal communications).

5.2.3. The visitor experience

The variability in the behaviour of the operators (Williams, 2013b; Personal observation) resulted in a highly uneven visitor experience and this variability was reflected in the commentary on the user generated websites. The harassment of whales by the boats, overcrowding, a considerable time spent on rough seas with some boats spending up to six hours at sea, sea sickness and safety concerns on board the ships (Williams, 2013a, 2013b; Sri Lankan Airlines, 2012) contributed to poor visitor experiences. As one disgruntled participant noted:

> "*BE RESPONSIBLE*!"Reviewed 28 February 2012*Unfortunately the growing tourist trade in Marissa has led to a lot of* '*cowboys*' [or Spout Chasers] *who are just out for money*…*They see a whale spout in the distance and a scrum of boats go after it at full throttle, their clients yelling and shouting with excitement. This frightens the whale and she dives, coming up after a long wait as far away from the boats as she can get. Then the process repeats. This is not whale watching. It is whale harassment.*

Unfortunately in 2014, despite the introduction Regulations, many people were still having unsatisfying experiences:

> "*We were taken hostages*"Reviewed 19 October 2014… *we could see that the crew was unable to control the 70 passengers on board and everything looked in a mess. Shortly after leaving the harbour people started to get sea sick* [due to rough seas with]…[A]*bout 80% of the passengers* [vomiting]… *After four hours of hopelessly looking for whales, watching bags of vomit … we finally told the crew we had enough and want to go back. The crew said that everybody want to go on and we told them to put it for vote* (sic). *After most people raised thier* [sic] *hands in favour of going back, the crew said we're turning around* [sic]. *It was a lie. It wasn't until half an hour later where they finally said that now we are really turning back. The feeling we had was like being hostage … The only thing mattered to them is to go forth so they wouldn't have to refund us for not seeing whales. Worst experience ever*!! *Don't go*!!!!

[1] It should be noted that operator behaviour varies widely and it is the better operators who have suffered due to the irresponsible behaviour of others (Williams, 2013b; personal observation).

One of the most concerning negative aspects emerging from the commentary is safety. One reviewer noted:

> "*Most dangerous travel company ever experienced.*"Reviewed 3 October 2014… *This company was chaotic at best but in reality could seriously have injured the people on board…the boat was completely full… disorganised staff…rushed to get extra life jackets from a neighbouring vessel prior to our departure… After around 3 or 4 h of sailing without seeing any whales* [some people wanted to return to port while others wanted to keep looking for whales]…*As a 'solution'…the team hailed down another boat that was heading back to shore and attempted to move those who didn't want to stay over to this boat. People were rushed to jump over to the other boat, without life jackets, whilst the two boats were unsecured and banging against each other in rough waters…In all my years of travelling I have never seen the safety of tourists so disregarded as I did today.*

The safety of passengers were also be threatened by a possible accidental whale touch arising from a boat venturing too close to a whale. An accident or the threat of one is likely to have a major impact on the industry (see Ilangakoon, 2009). Despite the many negative experiences there were also many very positive experiences had by whale watching visitors including one for the company that received negative feedback outlined previously. For example:

> "*unbelivable*!!!!"[sic]Reviewed 7 October 2014*it was more than we ever imagined. we were bit skeptical weather* [sic] *we see any at all... but we saw lot of them... plus hundreds of dolphins too... you have to wait for the right seasons as whales worn't* [sic] *be there year long. but seeing such massive creatures so close is an experience of a life time... no words to explain*!!!

5.2.4. Education and interpretation

The importance of education and interpretation for visitor satisfaction and enhancement of wildlife welfare is clearly identified in the literature (see Luck, 2003; Mayes & Richins, 2008; Parsons et al., 2003) however this aspect is lacking in the Sri Lankan industry (despite the aims of the Regulations). On the trips attended by the researchers there was some attempt to provide this however generally they were unsuccessful. For example, on one tour the education and interpretation consisted of an employee showing some tourists an English version of a whale identification book. The employee spoke only rudimentary English and many of the participants did not appear to be English speakers anyway. On another tour there was an attempt to provide some formal education and interpretation with a staff member providing and speaking to a map of the area. Again the employee's English proficiency was low, there were many nationalities on board and the way people gathered around the map meant only a limited number of passengers could see it and hear the employee. It appeared only a few of the passengers were engaged in education and interpretation. These personal observations were supported by various interview participants.

6. Discussion

The whale watching industry in Sri Lanka has grown relatively rapidly and haphazardly in short period of time. This growth has provided substantial benefits with the potential for providing even greater benefits in the future. However, in order to ensure ongoing benefits, it is apparent that the management of the industry needs to be addressed immediately.

The management problems facing the industry are similar to those experienced in a number of other whale watching destinations (Parsons, 2012). At the present time it appears that there are too many boats providing whale watching experiences although it is very difficult to ascertain exactly how many boats are involved in the industry. The difficult in accurately determining the number of boats providing tours is, in itself, indicative of a management problem. It also appears that the number of people is planning to enter the industry with many fishers converting their fishing boats into tour boats. The number of boats in the industry as well as the optimum number for an effective and efficient industry, need to be determined.

Another area that needs to be addressed is the behaviour of some of the boat operators. There is clearly a wide variation in operator behaviour in regards to their boat's interaction with the whales. This interaction is perceived by stakeholders and customers to impact on the whales and the visitor experience, which is currently highly variable.

It is difficult to establish how the inappropriate behaviour of tour boats fully impacts on the whale population. The relatively recent 'discovery' of whales off the Mirissa coast has meant there is comparatively little data available on the ecology of blue whales at this site (de Vos et al., 2013). Whale watching can have a wide variety of short-term effects on whales (Parsons, 2012; Higham et al., 2009) and this appears to be occurring at this site. However it is more difficult to determine longer term impacts (Higham et al., 2009). Determining the longer term impacts of the industry in Mirissa is further complicated by the location of a shipping lane in close proximity to the whales' habitat.

To minimise the impacts on whales and ensure a consistent quality visitor experience a stable and effective management structure is required. The introduction of the Regulations is a good first step in an attempt to establish management guidelines. This is a common method of trying to mitigate the impacts of boat-based whale-watching (Parsons, 2012) however there needs to be sufficient resources provided to enable the DWLC to implement and police them effectively. It is highly likely that adequate resources will not be forthcoming — a characteristic feature of protected area management in Sri Lanka (see Buultjens et al., 2005) and many other countries (de Oliveira, 2003).

The lack of resources is likely to constrain the strengthening of the institutional capacity of the DWLC to respond to actual or potential issues facing the industry (see de Oliveira, 2003). The lack of funding will prevent the DWLC from effectively monitoring the behaviour of the tour boats. It is also likely to prevent management from conducting carrying capacity studies that are required to determine appropriate visitation levels. There is recognition of the need for these studies however it is recognised that the funding is unlikely to be available in the short term at least (Government representative 23, personal communication).

Increasing the institutional capacity requires increased resources to be provided for the managing agency. Additional funds could be raised by increasing the licence fees for boat operators. The increase in fees may also deter some operators thereby relieving visitor pressure on the whales and adding to the visitor experience. The requirement of a licence fee may discourage any ill-prepared tour operators from operating in the industry; as long as the operators are effectively policed.

Increased fees could be used by the DWLC to effectively train the people who are to accompany all boats to ensure operators abide by the Regulations and possibly provide interpretation. Funding could also be used for the provision of formalised and on-going training and awareness programmes for boat operators. There have been privately funded workshops however there is a need for formalised on-going programme.

An improvement in training could also be accompanied by the introduction of an effective interpretation programme for visitors. Currently, most visitors receive very little interpretation including information about the whale watching rules and regulations. Improved interpretation will enhance the visitor experience as well as aid the operators to explain their actions to potentially dissatisfied customers.

An alternative measure could be the adoption of a participatory conservation approach. The DWLC has already successfully introduced a similar strategy in turtle conservation especially in Rekawa, where a local conservation group is effectively collaborating with DWLC to run community-led conservation and protection initiative for turtles. There may be potential to introduce a similar process around the

whale watching industry. It is important that local communities are closely involved in the planning for a sustainable industry and the implementation of conservation measures since they often have the most to lose from restrictive management policies (see Ransom & Mangi, 2010).

The increased funding could be provided for undertaking research into the whales, their habitat, the impacts of the industry and carrying capacity levels. Many people suggest that there is a need to limit the number of whale watching boats — a strategy successfully implemented in other countries. It is important that the levels of visitation are determined through empirical carrying capacity studies.

Finally, the existence of whale watching opportunities in Trincomalee offers the potential to involve the Tamil minority in the tourism industry. As Novelli, Morgan, and Nibigira (2012) note the development of the tourism industry offers an opportunity for poverty reduction as well as the promotion of peace in countries that have experienced periods of conflict. In order for this to occur there is a need for the government to provide a set of inclusive sector development actions as well as ensuring the empowerment of the community (Daley, 2006). In the post-war period this has yet to happen to any great extent (see Buultjens et al., 2015a).

7. Conclusion

Well managed whale watching is recognised as an important factor in assisting conservation as well as enhancing a destination's appeal and providing a significant boost to the local economy. Unfortunately there are perceived concerns about the management of whale watching in Sri Lanka and therefore its sustainability. The relatively recent identification of whale populations off the coast at Mirissa and the accompanying rapid expansion of international and domestic tourism industry in the country have placed increased pressures on the natural environment. The introduction of the Regulations has provided the DWLC with the opportunity to address the problems associated with the development of the industry however it appears that the DWLC is currently hampered by a severe lack of funding.

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