

Swim-with-whales tourism – an updated review of commercial operations

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Abstract

In 2003, the whale watching sub-committee of the IWC suggested that swim-with-whale operations were becoming wide-spread, and should be more fully reviewed in the future. In order to fulfil this task, and to monitor the development of the industry, we extended and updated the initial work presented at IWC 55 (SC/55/WW4). As in the previous paper, web searches were conducted using a variety of key phrases and search engines. In addition, a general request for information was sent to two international email lists and to colleagues in areas where swim-with-whale tours were known or suspected to operate. Only swims with large whales, not small cetaceans, were considered. Fifty-one commercial operations offering formal swims with whales and a smaller number of opportunistic swims were identified worldwide, as opposed to 29 formal swims in the previous work. Areas with the greatest number of operations featured warm, clear water (*i.e.*, good visibility); baleen whale mating and calving grounds were thus most often targeted. Swims with humpback and minke whales were found most frequently, although other baleen whales were also targeted; a small number of operators offered swims with toothed whales. Silver Bank in the Dominican Republic (humpbacks) had at least seven companies operating tours (an increase of one in two years); Tonga (humpbacks) had at least thirteen operators (an increase of five in two years); and the Great Barrier Reef (minkes) had at least five operators (a decrease of one in two years). Several areas, including Rurutu (French Polynesia) and Mayotte (Mozambique Channel) have had swim-with-whale operations initiated since the last review. Web sites mentioned whale conservation and passenger safety notably less often than in the previous review; whale research, conservation, or operational guidelines were all mentioned in less than 50% of web sites. Swim-with-whale operations continued both in the presence and absence of domestic legislation prohibiting whale disturbance and even, in at least three cases (Argentina, Brazil, and the Azores), specifically prohibiting swimming with whales

Introduction

Whalewatching has been growing in popularity since its beginnings in California in the 1950's. As of 2001, whalewatching occurred in 87 countries (including 34 of 49 IWC member countries), and accounted for over £650 million in direct income annually (Hoyt, 2001).

As whalewatching has grown in popularity, it has spawned several commercial operations that attempt to facilitate and increase whalewatchers' interactions with marine mammals. In the southeastern United States, an operation to attract bottlenose dolphins (*Tursiops truncatus*) by provisioning them with fish was outlawed by the US National Marine Fisheries Service in the late 1990's (NOAA Fisheries, 2002), although feeding wild cetaceans still continues on a low level in several US locations (*e.g.*, Samuels and Bejder, 1998). Several captive facilities developed 'swim-with-the-dolphin' programmes for small cetaceans, which were then copied by operations targeting animals in the wild. In the southern hemisphere, 'swim-with-wild-cetacean' programmes have grown rapidly in the past ten years. Samuels *et al.* (2003) break these into four types: interacting with lone social cetaceans; with food-provisioned cetaceans; with wild, habituated cetaceans; and with wild, non-habituated cetaceans. It is the latter category that includes the operations that we are considering in this paper.

Systematic studies have shown that interactions in swim-with-wild-dolphin operations can have conservation implications for the targeted animals. Samuels and Bejder (1998) found that swimming with and feeding wild bottlenose dolphins off Panama City, Florida, negatively influenced the animals; Constantine and Baker (1997) also noted that in some cases dolphin groups off New Zealand deflected their course to avoid people in the water with them. Samuels *et al.* (2000) reviewed available data on wild dolphin swim operations and found that there was a 'clear risk' of harassment to small cetaceans from such operations, as well as a threat to humans. Based on their findings, the US Marine Mammal Commission suggested that regulations be promulgated to specify "that any activity intended to be able

to enable in-water interactions between humans and dolphins in the wild constitutes a taking and is prohibited” (NOAA Fisheries, 2002). However, swim-with-wild-dolphin operations continue to thrive and expand in many parts of the world (Samuels and Bejder, 1998; Dudzinski *et al.*, 1999; Samuels *et al.*, 2003).

While several studies on the availability and potential effects of swim-with-wild-dolphin operations have been and are currently being conducted and at least two significant reviews on these operations and their impacts have been published, there are very few data available on large whale swims and no reviews to date. Despite this, it is known that in some areas swim-with-whale operations are developing rapidly. Dwarf minke whales (*Balaenoptera acutorostrata*) off eastern Australia, on the Great Barrier Reef, started to interact with snorkelling people during the mid-1990's (Arnold, 1997), which quickly led to the development of focused tours (Birtles and Arnold, 2000; Great Barrier Reef Marine Park Authority, 2000; Birtles *et al.* 2002a, 2002b; Valentine *et al.*, 2004). The wintering ground of several populations of humpback whales (*Megaptera novaeangliae*), in tropical coastal waters such as Silver Bank in the Dominican Republic and the Kingdom of Tonga in the South Pacific, have also lent themselves to the development of this industry (see below).

The International Whaling Commission Scientific Committee (IWC SC) has been conducting an on-going review of swimming with cetaceans, especially small cetaceans such as bottlenose dolphins and pilot whales (*Globicephala spp.*) (*e.g.*, IWC, 2001). After receiving a detailed description of the dwarf minke whale swims on the Great Barrier Reef (Birtles and Arnold, 2000), the IWC SC recognised that whale swims have the potential to negatively impact whales through harassment and disturbance. A request to review the practice of swimming with large whales was made by the Whalewatching Sub-Committee in 2002. A first step was a preliminary review of worldwide programmes at IWC/55 (Iñiguez and Tossenberger, 2003; Rose *et al.*, 2003). At the time, the Sub-committee agreed that a more comprehensive review was warranted. Further, since the development of swim-with-whale operations could echo the exponential growth that whalewatching has shown in many places (Hoyt, 2001; Rummage, 1990), it might be important to monitor changes in the industry. This paper is meant to take a step towards those goals. In areas where such operations are known to exist, we made an effort to determine the current conduct of the industry, in terms of developing and following guidelines, delivering educational messages, and conducting research, and to compare them to our previous results. An effort to identify lower profile areas where such operations exist was also made, including those operations that were just starting or being developed formally. Determining the extent of this activity is important in assessing potential impacts and management strategies that will assist in minimizing adverse effects to large whales and their population.

Methods and Results

Table 1 lists all the formal swim-with-whale operations and opportunistic whale swims identified in this review. ‘Formal’ denotes specific operations that were identified via web sites, other media, or through a combination of web sites and personal communication with colleagues familiar with the relevant operations (*i.e.*, some whalewatching and dive web sites did not specifically mention swimming with whales, but the routine, although at times incidental, occurrence of whale swims was nevertheless confirmed by personal communication – see below). It does not necessarily mean ‘legal’ in the sense of being recognised by responsible agencies as complying with domestic legislation. ‘Opportunistic’ denotes the occurrence of whale swims, confirmed by personal communication, without identifying specific operations. Recognised swims (formal or opportunistic) were limited to those that were commercial in nature – the participants in the swim paid money to an operator to access the whales. Incidental and opportunistic swims seemed to occur most often from whalewatching vessels, dive boats, or chartered fishing vessels.

To identify formal operations, at least 10 separate web searches, using five different search engines (Google, Yahoo, Alta Vista, Lycos, and MSN) were conducted, using the following key words and terms: swim with wild whales; whale swims; wild whale swims; dive with wild whales; snorkel with wild whales; encounters with wild whales; and swimming with whales. Several of these were combined with geographic location names, including South Africa; Brazil; Rurutu; Tonga; Niue; French Polynesia; South Pacific; Great Barrier Reef; Australia; and Caribbean. Forty-one (41) commercial operators, specifically or incidentally offering swims with whales, were identified worldwide with these searches – this compares with 21 operators identified in the web searches for SC/55/WW4 (Rose *et al.*, 2003). (Five operators offered whale swims in two separate locations each – each was counted as

Table 1. All formal and opportunistic whale swims identified via web searches and information requests

SPECIES TARGETED	LOCATION	AGE/SEX CLASS TARGETED	COUNTRY RESPONSIBLE FOR LEGISLATION	NAME OF OPERATION (IF KNOWN)	SOURCE
Humpback whale	Silver Bank	Mother/calf	Dominican Republic	Animals in Our Hearts	Web site
Humpback whale	Silver Bank	Mother/calf	Dominican Republic	Aquatic Adventures	Web site
Humpback whale	Silver Bank	Mother/calf	Dominican Republic	Divine Awakenings	Web site
Humpback whale	Silver Bank	Mother/calf	Dominican Republic	Dolphin Dreamtime Adventure Tours	Web site
Humpback whale	Silver Bank	Mother/calf	Dominican Republic	Dolphin Essence	Web site
Humpback whale	Silver Bank	Mother/calf	Dominican Republic	Joan Ocean's Dolphin Connection	Web site
Humpback whale	Silver Bank	Mother/calf	Dominican Republic	Turks and Caicos Aggressor	Web site
Humpback whale	Rurutu	Mother/calf	France	Dive Discovery	Web site
Humpback whale	Rurutu	Mother/calf	France	Diving World	Web site
Humpback whale	Rurutu	Mother/calf	France	Divequest	Web site
Humpback whale	Rurutu	Mother/calf	France	Scuba Safaris	Web site
Dwarf minke whale ¹	Great Barrier Reef	Mixed	Australia	Diversion	Web site
Dwarf minke whale	Great Barrier Reef	Mixed	Australia	Explorer Ventures	Web site
Dwarf minke whale	Great Barrier Reef	Mixed	Australia	Mike Ball Dive Expeditions	Web site
Dwarf minke whale	Great Barrier Reef	Mixed	Australia	Taka Dive	Web site
Dwarf minke whale	Great Barrier Reef	Mixed	Australia	Undersea Explorer	Web site
Humpback whale	Drake Bay	Mother/calf	Costa Rica	Aguila de Osa	Web site
Humpback whale	Drake Bay	Mother/calf	Costa Rica	Divine Dolphin	Web site
Humpback whale	Drake Bay	Mother/calf	Costa Rica	Drake Bay Resort	Web site
Humpback whale	Drake Bay	Mother/calf	Costa Rica	Jinetes de Osa	Web site
Humpback whale	Tonga	Mother/calf	Kingdom of Tonga	Dolphin Discoveries	Web site
Humpback whale	Vava'u	Mother/calf	Kingdom of Tonga	Dolphin Essence	Web site

¹ According to Birtles *et al.* (2002a), the dwarf minke whales involved in the swims on the Great Barrier Reef are rarely mother-calf pairs and are not feeding, but may be mating or travelling animals.

Humpback whale	Vava'u	Mother/calf	Kingdom of Tonga	Dolphin Pacific Diving	Web site
Humpback whale	Vava'u	Mother/calf	Kingdom of Tonga	Melinda Sea Adventures	Web site
Humpback whale	Ha'apai	Mother/calf	Kingdom of Tonga	NAI'A	Web site
Humpback whale	Tonga	Mother/calf	Kingdom of Tonga	One Love One Spirit	Web site
Humpback whale	Vava'u	Mother/calf	Kingdom of Tonga	Reef and Rainforest Dive and Adventure Travel	Web site
Humpback whale	Vava'u	Mother/calf	Kingdom of Tonga	Responsible Travel	Web site
Humpback whale	Vava'u	Mother/calf	Kingdom of Tonga	Sailing Safaris	Web site
Humpback whale	Vava'u	Mother/calf	Kingdom of Tonga	Sea for Yourself Snorkelling Safaris	Web site
Humpback whale	Vava'u	Mother/calf	Kingdom of Tonga	Taufonua Travel	Web site
Humpback whale	Vava'u	Mother/calf	Kingdom of Tonga	Whales in the Wild	Web site
Humpback whale	Vava'u	Mother/calf	Kingdom of Tonga	WhaleSwim Adventures	Web site
Humpback whale	Niue	Mixed	New Zealand	Big Animals Photography Expeditions	Web site
Humpback whale	Niue	Mixed	New Zealand	Niue Dive	Web site
Humpback whale	Niue	Mixed	New Zealand	Pacific Island Travel	Web site
Humpback whale	Niue	Mixed	New Zealand	The POD (People-Oceans-Dolphins)	Web site
Humpback whale	Niue	Mixed	New Zealand	Responsible Travel	Web site
Humpback whale	Niue	Mixed	New Zealand	WhaleSwim Adventures	Web site
Humpback whale	Mayotte	Mother/calf	France	Le Jardin Maore	Web site
Humpback whale	Mayotte	Mother/calf	France	Mayotte Decouverte	Web site
Humpback whale	Mayotte	Mother/calf	France	Sea Blue Safari	Web site
Bowhead whale	Nunavut	Mixed	Canada	Arctic Kingdom Marine Expeditions	Web site
Blue whale	San Diego, California	Mixed	USA	Big Animals Photography Expeditions	Web site
Southern right whale	San Antonio Oeste	Mother/calf	Argentina	Cota Cero Buceo	Web site
Gray whale	Baja California Sur	Mother/calf	México	Dolphin Dreamtime Adventure Tours	Web site
Humpback whale	Kona, Hawaii	Mother/calf	USA	Joan Ocean's Dolphin Connection	Web site
Humpback whale	Maui, Hawaii	Mother/calf	USA	Makena Coast Dive Charters	Web site

Humpback whale	Great Barrier Reef	Mother/calf	Australia	Mike Ball Dive Expeditions	Web site
Humpback and southern right whales	Kwa Zulu Natal	Mixed	South Africa	Reefcomber Tours	Web site
Humpback whale	Abrolhos Bank	Mother/calf	Brazil	Victory Adventure Travel ²	Web site
Southern right whale ³	Peninsula Valdes	Mother/calf	Argentina	Opportunistic	Anonymous
Humpback whale	Turks and Caicos Islands	Adult	United Kingdom	Opportunistic	D. Bernal
Humpback whale	Golfo Papagayo	Mother/calf	Costa Rica	Opportunistic	Fundación Promar
Humpback whale	Islas Marietas, Bahía de las Banderas	Mixed	México	Opportunistic	L. Rojas-Bracho
Dense-beaked and sperm whale	Mayotte, Africa	Mixed	France	Opportunistic	J. Kiszka
Blue, fin ⁴ , sei whales	Azores	Adult	Portugal	Opportunistic	L. Steiner
Sperm whale	Galápagos Islands	Adult	Ecuador	Opportunistic	M. Weinrich; Samuels <i>et al.</i> (2000)

a separate operation.) Five operations identified for SC/55/WW4, but not found during the current web searches, were found to still have active web sites. (Four operators identified for SC/55/WW4 no longer had active web sites.) Therefore, a total of 46 operations were identified via web searches. The number of vessels used by each operation was not noted (this information was not always available on the web sites), although several were noted as operating more than one vessel.

An email solicitation with a general request for information on whale swims worldwide was sent to the MARMAM and European Cetacean Society email listserves, as well as several other professional email lists (primarily of environmental organizations working on marine mammal issues). This was supplemented by targeted requests to international colleagues living in areas where swim-with-whale tours were suspected of operating and to individuals who had responded in 2003. Replies reported five additional formal operations – the reporters confirmed the occurrence of whale swims for all five operations, although the web sites did not always specifically mention whale swims. Fifty-one (51) commercial operations offering swims with whales worldwide were thus identified compared to 29 in 2003, an increase of 43%.

Seven opportunistic whale swim situations were identified or reported, some possibly involving more than one commercial operator. The opportunistic swims in the Turks and Caicos, the Galapagos, and the Azores were confirmed as still occurring by the original reporters. Opportunistic swims in Argentina, Costa Rica, Mexico, and Mayotte were reported by new respondents (see Table 1).

At least five previously unidentified, and likely new, locations were identified in 2005 – Rurutu, French Polynesia; the island of Mayotte in the Mozambique Channel; Kwa Zulu Natal, South Africa; San Antonio Oeste, Argentina; and the Abrolhos Bank, Brazil⁵. Seven locations/operations were not re-identified – no formal or opportunistic swims were identified or reported in 2005 in the Maldives; Togo or Kenya, Africa; Spain; or the Bay of Fundy, Canada. This does not necessarily mean whale swims no longer occur in these locations, but simply that our web searches and solicitations for information did not re-identify them.

² This web site was last updated in August 2004; inquiries to colleagues in Brazil indicated that this operation had been contacted several years previously and warned to stop operations (swimming with whales is illegal in Brazil), but it was not possible to confirm that it had complied as of the date of submission of this paper.

³ *Eubalaena australis*.

⁴ *Balaenoptera physalus*.

⁵ Personal communications confirmed that the Abrolhos Bank operation listed in Table 1 had been in business several years previously, but may have stopped operating for some period (SC/55/WW4 and WW9 did not identify it) before beginning operations again sometime in 2004 (see Footnote 2).

As in 2003, swims with humpback and minke whales were found most frequently, although other baleen whales were also targeted; two opportunistic locations offered swims with sperm (*Physeter macrocephalus*) or beaked whales (*Mesoplodon spp.*) (see Table 1). Silver Bank in the Dominican Republic had at least seven companies operating tours (one more than in 2003); Tonga had at least 13 operators (five more than in 2003); and the Great Barrier Reef had at least five operators (one less than in 2003, although as of June 2004 there were nine valid permits for vessels to swim with whales issued⁶) (Table 1). Niue expanded from one to six operations. In Rurutu and Mayotte, both newly identified locations, four and three operations were identified respectively. In Rurutu, whale swims have begun only in the last two years (M. Poole, personal communication), whilst in Mayotte, whale swims may have been occurring during the previous review, but remained unidentified, as the web sites reported during this review were all in French. (Note that our methodology would almost certainly miss operations whose web sites are entirely in foreign languages.)

The number of operations on Silver Bank is likely to be accurate, as there is some governmental oversight (licensing) of swim-with-whale operators in this Dominican Republic-managed marine sanctuary. However, it is more difficult to determine if the catalogue of operators in Tonga and the Great Barrier Reef is exhaustive. As indicated above, not all swim-with-whale operations with web sites were located with the web searches; in addition, some commercial operators offering whale swims in these areas may not have web sites or may not formally offer their swim opportunities on their web sites.

For formal operations (see Appendix 1), an effort was made to answer five questions:

- 1) Did the web site mention guidelines, formal or informal, for conducting swims or approaching whales?
- 2) Did the web site mention conservation or protection efforts (including the establishment of sanctuaries) or environmental concerns involving the target species or the location?
- 3) Did the web site mention human safety issues (*e.g.*, potential for injury, from diving or whales)?
- 4) Did the web site mention any staff certifications, staff degrees, or any other indications of the level of professionalism of the staff?
- 5) Did the web site mention research projects that had been conducted or were on-going in the region or any association of the operation with researchers?

These questions were an attempt to examine the effort commercial operations made to address precautionary elements with prospective customers.

Figure 1 shows the percentage of the 51 formal operations' web sites that contained at least some text addressing each of the five precautionary elements. Twenty-four (47.1%) mentioned guidelines, formal or informal. Only operations in Tonga actually presented specific guidelines on the web site. Non-specific references to entering the water and swimming in ways that 'do not disturb' the whales were considered a mention of informal guidelines.

⁶ Dr Alistair Birtles, quoted on <http://www.reef.crc.org.au/media/MinkeMagic.htm>.

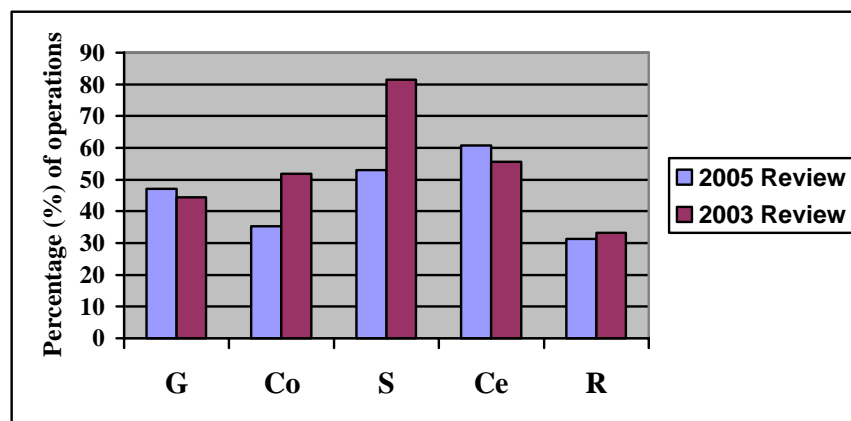


Figure 1. Percentage of 51 web sites mentioning each of the following five elements: Swim or approach guidelines (G), whale or marine conservation (Co), human safety (S), staff certifications (Ce) and research projects or associations (R).

Eighteen web sites (35.3%) made some mention of conservation, a decrease from the 51.8% found in 2003. Some were as brief as specifying that a species was endangered and needed protection; some were as elaborate as offering detailed text on sanctuary designations. Human safety was the second most frequently mentioned element (27/51 – 52.9%), another decrease from the 81.5% found in 2003. Many of the sites mentioned human safety only in the context of safe diving or snorkelling, rather than in the context of risk from the whales. However, a small number of sites did indicate that whales could injure people, even if inadvertently. Mention of certifications often went hand-in-hand with safety – 31 sites (60.8%) highlighted the credentials and qualifications (technical and scientific) of their staff, similar to the 55.6% of two years ago. Finally, only 16 (31.4%) mentioned any research efforts, either the operation's own or affiliations or relationships with independent researchers, also similar to the 33.3% of the previous review. Nine web sites (17.6%) did not mention any of these five elements – the opportunity to swim with whales was offered, often with simply one or two lines of text, but no details were provided of the circumstances surrounding the swim activity.

Discussion

The results of our work indicate that swim-with-whale operations have likely increased in the past two years, both in the number of operations in geographic areas identified during the previous work, and in the number of locations where excursions are taking place. Almost twice as many operators were identified as in our previous effort (51 vs. 29 two years ago). Whilst some of this increase may be due to more efficient and experienced web searches, increased participation from the targeted listserves, and the addition of a co-author from Latin America, the increase in identified swim-with-whale operations also likely represents a true trend in the activity worldwide.

The development of new locations for swim-with-whale encounters appears to follow a growing awareness of the presence of whales in those areas. The efforts of researchers to explore the distribution and abundance of local whales (*e.g.*, Hauser *et al.*, 2000 for French Polynesia; Martins *et al.*, 2001 for Brazil; Rosenbaum, 2001 for Mayotte) combined with associated local press coverage may well be introducing opportunities for growth in the industry. This may be both because operators have become aware of the presence of the whales and the opportunity to generate income from them, and because local residents and visitors may be more likely to seek out efforts to contact local whale populations. Whether the increase in swim-with-whale operations in these areas is mirrored by a growth of local boat-based whalewatching remains unknown, but may be worth investigating, especially in areas where the number of whales may be small or limited (*e.g.*, French Polynesia).

The trend identified in the previous work for swim-with-whale operations to target large whale breeding areas continues to be strong. Given the warm and relatively clear waters of many of these areas, this is not surprising. However, the finding that swim-with-whale operations extend to species occurring in inhospitable locations, such as bowhead whales, shows that the development of the industry is not solely tied to these environmental conditions. Many of the smaller operators conducting

whale swims also rely on the target species' coastal distribution (*e.g.*, humpback whales inshore in Tonga), although live-aboard vessels allow access to offshore populations in several key areas (*e.g.*, Silver Bank for humpback whales, Great Barrier Reef for dwarf minke whales). The cost of the extended trips into more remote areas may limit the growth of these operations more than those with coastal whales due to the greater cost and time commitment of accessing offshore populations. However, the customer satisfaction with inquisitive wild animals, and the growth of eco-tourism worldwide, indicates that there are growth opportunities even in offshore operations.

Despite the industry's apparent growth, the effect of swim-with programmes on targeted species continues to be relatively unexplored. Samuels *et al.* (2003) note that the nature of the operations often leads them to access and influence calves and juvenile animals, age classes identified as those most likely to forego interactions with conspecifics to interact with humans. The same bias was noted in our previous review (Rose *et al.*, 2003). These are life stages at which the animal may be more vulnerable, due to limited energy reserves (Lockyer 1981; Weinrich *et al.*, 1997; T. Ramage, pers. comm.) and relatively high mortality is common (18.2% of humpback whale calves in the North Pacific were found to die prior to arrival on their Alaskan feeding grounds, although sample size was limited [Gabriele *et al.*, 2004]). Hence, repeated interactions and/or disturbance by humans could influence an animal's fitness. However, we have found no evidence that studies to assess this possibility have been undertaken since the previous review.

The possibility of disturbance is compounded by the desire of passengers to have 'close' in-water interactions with whales. Valentine *et al.* (2004) found that proximity to the whales significantly correlated with passenger satisfaction during encounters with dwarf minke whales, and noted that "industry has to ensure that passengers have realistic expectations about how close their contacts with whales will be." While this may be possible in areas where management oversight is strong and conservation of the target species is considered, this may be impossible in some areas. If water visibility is limited, for instance, close approaches are required for in-water viewing. The trend we found over the past two years was for fewer web sites to discuss species conservation, which raises a real concern that operators may give priority to passenger satisfaction rather than species conservation, also increasing the risk of disturbance.

While we were unable to find any notable change in the number of web sites that mentioned the qualifications of their staff, the appropriate guidelines for the programme, or a tie to research activities, the decrease in sites that discussed either conservation or safety cannot be viewed as a positive trend. It is possible that where the industry is new, or in lesser developed regions, such appeals may not be viewed as important in obtaining customers. Alternately, the absence of this information could indicate that the industry is attempting to appeal to people with a more passing interest in whales, who are less likely to value conservation or research, rather than a more knowledgeable constituency who would view conservation or research ties as a positive factor in determining whether or not to participate in such an excursion. It should also be noted that the mention or claim of research by an operator does not guarantee its reliability. In the case of at least one web site, extensive references are made of the role the cruise plays in providing photo-identification data to oceanic catalogues, despite the fact that the catalogue coordinator was unable to find any records of their submission.

As noted in our previous report, however, the 'formality' of operations is not intended to imply legality. Whale swims occurred both in the presence and absence of domestic legislation prohibiting whale disturbance. Argentina has a statute (Chubut Law 2381/84 and 2618/85) that specifically prohibits swimming with southern right whales. Nevertheless, operators were anecdotally reported to openly offer opportunities to swim with these whales on their breeding grounds (Anonymous – see Table 1). In the Azores a prohibition on swimming with large whales, with limited exceptions, has been in place since February 1999 (Samuels *et al.*, 2000; see also <http://whalewatchazores.com/news.htm#spr99>). However, opportunistic swims with large whales continue to be reported (see Table 1). A formal operation was identified in Brazil (Table 1), where it is also illegal to swim with whales. In some cases, the legality of swim-with-whale operations is questionable, although they are not specifically banned as such. It is illegal under the US Marine Mammal Protection Act (MMPA) to 'harass' marine mammals, but there are currently no specific regulations prohibiting swimming with wild cetaceans. For Hawaiian humpbacks, a 100-yard approach regulation is in place (CFR, 2002), so while there may be debate as to the legality of being in the water with the whales, it would clearly be illegal to approach them closer than this. However, swimming at this distance from whales, even in exceptionally clear water, may not allow swimmers to see the whales underwater, undoubtedly reducing the value of the experience for swimmers. Closer approaches would be likely. Both humpbacks and blue whales are also listed as endangered under the US Endangered

Species Act (no targeted species of dolphins are listed under this statute), bolstering the argument that these swims should be treated as illegal. The US National Marine Fisheries Service has made numerous attempts to educate the public and commercial operators about the agency's approach restrictions and marine mammal viewing guidelines (N. Rose, pers. obs.), but the operators listed in Table 1 continue to advertise swims in contradiction to the agency's regulations and policies.

In conclusion, we find that based on our methodology, swim-with-whale tours are increasing throughout the world. We feel that this trend requires continued monitoring and evaluation. If the trend continues, and industries continue to grow, the importance of well planned and executed studies to evaluate the effect of these interactions on the targeted individuals and populations will also increase.

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Appendix 1

For each company, it is noted if the web site mentions any of the following five elements: Guidelines (whether any guidelines, formal or informal, are followed during swims); conservation (environmental concerns or conservation efforts or associations); (human) safety; certifications (professionalism or educational level of staff, diving or other certifications, licenses); and research (past or current projects in the region/associations with researchers). Targeted age/sex classes are also noted.

1. Animals in Our Hearts (aka Bottom Time 2)
<http://www.animalsinourhearts.com/whales/index.htm>
Humpback whale swim – Silver Bank, Dominican Republic
Guidelines; conservation; safety; certifications
Mother/calf
2. Aquatic Adventures
www.aquaticadventures.com
Humpback whale swim – Silver Bank, Dominican Republic
Guidelines; conservation; certifications; research
Mother/calf
3. Divine Awakenings
<http://www.divineawakenings.com>
Humpback whale swim – Silver Bank, Dominican Republic
None
Mother/calf
4. Dolphin Dreamtime Adventure Tours
<http://www.dolphindreamtime.com>
Humpback whale swim – Silver Bank, Dominican Republic
Certifications
Mother/calf
5. Dolphin Essence
<http://www.dolphinessence.com>
Humpback whale swim – Silver Bank, Dominican Republic
Certifications; research
Mother/calf
6. Joan Ocean's Dolphin Connection
<http://www.joanocean.com>
Humpback whale swim – Silver Bank, Dominican Republic
None
Mother/calf
7. Turks and Caicos Aggressor
<http://www.turksandcaicosaggressor.com>
Humpback whale swim – Silver Bank, Dominican Republic
Guidelines; conservation; safety; certifications
Mother/calf
8. Dive Discovery
<http://www.divediscovery.com>
Humpback whale swim – Rurutu, French Polynesia
None
Mother/calf
9. Diving World
<http://www.diving-world.com>
Humpback whale swim – Rurutu, French Polynesia
None
Mother/calf

10. Divequest

<http://www.divequest.co.uk>

Humpback whale swim – Rurutu, French Polynesia

Guidelines; certifications

Mother/calf

11. Scuba Safaris

<http://www.scuba-safaris.com>

Humpback whale swim – Rurutu, French Polynesia

Safety; certifications

Mother/calf

12. Diversion

<http://www.diversionoz.com>

Dwarf minke whale swim – Great Barrier Reef, Australia

Conservation; safety; certifications

Mixed

13. Explorer Ventures

www.explorerventures.com/australia.html

Dwarf minke whale swim – Great Barrier Reef, Australia

Certifications

Mixed

14. Mike Ball Dive Expeditions

<http://www.mikeball.com>

Dwarf minke whale swim – Great Barrier Reef, Australia

Guidelines; safety; research

Mixed

15. TAKA Dive

www.taka.com.au

Dwarf minke whale swim – Great Barrier Reef, Australia

Certifications; research

Mixed

16. Undersea Explorer

www.undersea.com.au

Dwarf minke whale swim – Great Barrier Reef, Australia

Guidelines; conservation; safety; certifications; research

Mixed

17. Aguila de Osa Inn

<http://www.aguiladeosa.com/tours/whales/index.html>

Humpback whale swim – Drake Bay, Costa Rica

None

Mother/calf

18. The Divine Dolphin

<http://www.divinedolphin.com>

Humpback, sei, and Bryde's whale swims – Drake Bay, Costa Rica

Guidelines; conservation; research

Mixed

19. Drake Bay Resort

<http://www.drakebay.com>

Humpback, "other" whale swims – Drake Bay, Costa Rica

(Incidental to dolphin swims) None

Mixed

20. Jinetes de Osa

<http://www.costaricadiving.com>

"Other" whale swim – Drake Bay, Costa Rica

(Incidental to dolphin swims) Guidelines

Mixed

21. Dolphin Discoveries
<http://www.dolphindiscoveries.com>
Humpback whale swim – Kingdom of Tonga, South Pacific
Safety; certifications
Mother/calf
22. Dolphin Essence
<http://www.dolphinessence.com>
Humpback whale swim – Vava’u, Kingdom of Tonga, South Pacific
Certifications; research
Mother/calf
23. Dolphin Pacific Diving
<http://www.academydivers.co.nz/>
Humpback whale swim – Vava’u, Kingdom of Tonga, South Pacific
Safety; certifications
Mother/calf
24. Melinda Sea Adventures
<http://www.sailtonga.com>
Humpback whale swim – Vava’u, Kingdom of Tonga, South Pacific
Guidelines; conservation; safety; research
Mother/calf
25. NAI’A
<http://www.naia.com.fj/index.html>
Humpback whale swim – Ha’apai, Kingdom of Tonga, South Pacific
Guidelines; conservation; safety; certifications; research
Mother/calf
26. One Love One Spirit
<http://www.oneloveonespirit.com>
Humpback whale swim – Kingdom of Tonga, South Pacific
Guidelines; safety
Mother/calf
27. Reef and Rainforest Dive and Adventure Travel
<http://www.reefrainforest.com>
Humpback whale swim – Vava’u, Kingdom of Tonga, South Pacific
Guidelines; conservation; safety; certifications; research
Mother/calf
28. Responsible Travel
<http://www.responsibletravel.com/Trip/Trip101000.htm>
Humpback whale swim – Vava’u, Kingdom of Tonga, South Pacific
Guidelines; conservation
Mother/calf
29. Sailing Safaris
http://www.sailingsafaris.com/swim_with_the_whales.htm
Humpback whale swim – Vava’u, Kingdom of Tonga, South Pacific
Safety; certifications
Mother/calf
30. Sea for Yourself Snorkelling Safaris
<http://www.seaforyourself.com>
Humpback whale swim – Vava’u, Kingdom of Tonga, South Pacific
Conservation; safety; certifications
Mother/calf
31. Taufonua Travel
<http://www.taufonua.com/diving.html>
Humpback whale swim – Vava’u, Kingdom of Tonga, South Pacific
Certifications
Mother/calf

32. Whales in the Wild
<http://www.whales-in-the-wild.com>
Humpback whale swim – Vava’u, Kingdom of Tonga, South Pacific
Guidelines; conservation; safety; research
Mother/calf
33. WhaleSwim Adventures
<http://www.whaleswim.com>
Humpback whale swim – Vava’u, Kingdom of Tonga, South Pacific
Guidelines; conservation; safety; certifications; research
Mother/calf
34. Big Animals Photography Expeditions
<http://www.biganimals.com>
Humpback whale swim – Niue, South Pacific (New Zealand)
Guidelines; safety; certifications
Mixed
35. Niue Dive
<http://www.dive.nu/> and <http://www.niueisland.com/dolphinwhale/>
Humpback whale swim – Niue, South Pacific
Guidelines; safety; certifications
Mixed
36. Pacific Island Travel
<http://www.pacificislandtravel.com>
Humpback whale swim – Niue, South Pacific
Safety; certifications
Mixed
37. The POD (People-Oceans-Dolphins)
<http://www.people-oceans-dolphins.com>
Humpback whale swim – Niue, South Pacific
Guidelines; safety
Mixed
38. Responsible Travel
<http://www.responsibletravel.com/Trip/Trip101000.htm>
Humpback whale swim – Niue, South Pacific
Guidelines; conservation
Mother/calf
39. WhaleSwim Adventures
<http://www.whaleswim.com>
Humpback whale swim – Niue, South Pacific
Guidelines; conservation; safety; certifications; research
Mother/calf
40. Le Jardin Maore
<http://www.hotel-jardin-maore.com>
Humpback whale swims – Mayotte, Africa (Mozambique Channel)
Conservation; certifications; research
Mother/calf
41. Mayotte Decouverte
<http://perso.wanadoo.fr/mayotte-decouverte>
Humpback whale swim – Mayotte, Africa
None
Mother/calf
42. Sea Blue Safari
<http://www.seabluesafari.com>
Humpback whale swim – Mayotte, Africa
Guidelines; safety; research
Mother/calf

43. Arctic Kingdom Marine Expeditions, Inc.
<http://www.arctickingdom.com>
Bowhead whale swim – Igloolik, Nunavut, Canada
Conservation; safety; certifications
Mixed
44. Big Animals Photography Expeditions
<http://www.biganimals.com>
Blue whale swim – San Diego, California, United States
Guidelines; safety; certifications
Mixed
45. Cota Cero Buceo
<http://www.cotacero buceo.com.ar>
Southern right whale swim – San Antonio Oeste, Argentina
(Incidental to dive excursions) Guidelines; certifications
Mother/calf
46. Dolphin Dreamtime Adventure Tours
<http://www.dolphindreamtime.com>
Gray whale swim – Baja California Sur, Mexico
Certifications
Mother/calf
47. Joan Ocean's Dolphin Connection
<http://www.joanocean.com>
Humpback whale swim – Kona, Hawaii, United States
(Incidental to dolphin swims) None
Mother/calf
48. Makena Coast Dive Charters
<http://mauiunderwater.com/divesites.html>
Humpback whale swim – Maui, Hawaii, United States
(Incidental to dive excursions) Conservation; certifications
Mother/calf
49. Mike Ball Dive Expeditions
<http://www.mikeball.com>
Humpback whale swim – Great Barrier Reef, Australia
Guidelines; safety; research
Mother/calf
50. Reefcomber Tours
<http://www.scubadiving.co.za/africanext.htm>
Humpback and southern right whale swims – Kwa Zulu Natal, South Africa
(Incidental to dive excursions) Safety; certifications
Mixed
51. Victory Adventure Travel⁷
http://www.victory-cruises.com/brazil_whales.html
Humpback whale swim – the Abrolhos Bank, Brazil
Guidelines; safety
Mother/calf

⁷ See Footnote 2.