

The Whale Shark Tourism Industry in Holbox, Mexico

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Abstract

The whale shark tourism industry in Holbox, Mexico has grown substantially since its inception in 2002. This growth has gone largely uncontrolled, and as a result, several problems within the industry have surfaced. The present study aims to gather the missing, in-depth perspective of the tour operators as to the source of and relevant solutions to these problems. Semi-structured interviews of 21 tour operators were conducted during the month of August, 2012, and three issues and the problems associated with these issues emerged from the data: (1) Poor communication between operators and tourists and operators and government agencies has contributed to the absence of information and misinformation, respectively; (2) The failure of government to provide the support desired by operators has led to operator dissatisfaction with and resentment toward the government agencies involved; (3) Pervasive rivalry within the operator community exists, largely explained by the division of the broader community due to unequal distribution of wealth. Immediate efforts to address industry problems should focus on tourist behavior and education, made possible with the involvement of non-governmental organizations.

INTRODUCTION

The Whale Shark

The whale shark (*Rhincodon typus*) was first described and named by Dr. Andrew Smith in Table Bay, South Africa in 1828 (Colman 1997). Since then, whale sharks have been spotted in the tropical and warm temperate oceanic and coastal environments of over 130 countries (Gunn, Stevens, Davis & Norman 1999, Stacey, Karam, Meekan, Pickering, Ninf 2012). While precise migration patterns are unknown, certain whale sharks have been noted to return annually to a particular destination, as confirmed by photo-identification of an individual's unique pattern of spots (Gunn et al. 1999, Mau 2008). In 37 months, a satellite tracked a single whale shark covering a distance of over 12,000 miles (Wilson, Polovina, Stewart & Meekan 2006).

At lengths of over twelve meters, the whale shark is the largest fish on Earth, reaches sexual maturity around 30 years of age, and is thought to have a lifespan of over 100 years (Colman 1997, Wilson et al. 2006). Whale sharks are filter feeders and do not depend on forward motion to eat their diet of primarily plankton, small fish, and cephalopods, and because of this motionlessness, are thought to require dense prey populations (Colman 1997, Gunn et al. 1999).

Unfortunately, the global population of whale sharks is unknown, and only 4,111 individual whale sharks have been identified thus far (ECOCEAN 2012). Additionally, whale sharks, like all shark species, currently face threats due to over-exploitation (Norman 2011). Though they have been proven to be more valuable alive than dead (Graham 2004), whale sharks are an easy target for fishermen. In Indonesia, whale sharks are referred to as *ikan bodoh* or 'stupid fish' (Stacey et al. 2012), and in Taiwan the

sharks are fished and their soft meat sold as “tofu shark” (Norman 2011). Such accidental and purposeful catch, an unknown total population, and a K-selected life history, have earned the whale shark a “vulnerable” status on the International Union for Conservation of Nature and Natural Resources (IUCN) list (Norman 2011). Whale sharks are also listed in Appendix II of both the Convention on Migratory Species (CMS) and the Convention on International Trade in Endangered Species (CITES) (Brooks 2010).

The Global Whale Shark Tourism Industry

At the turn of the century, research showed that tourists were becoming increasingly interested in taking more active vacations, and seeing wild animals was a way to fulfill such interest (Davis 1998). More recently, it has been hypothesized that those with a keen interest in wildlife are seeking ways to experience animals in their natural environments instead of in captive environments such as zoos or aquariums (Ballantyne, Packer, Hughes & Dierking 2007). It therefore follows that swimming with whale sharks has become a popular tourist attraction, with one location exceeding a growth rate of 150% from 1995 to 2004 (Mau 2008). Industries have developed in over a dozen locations worldwide including India, Thailand, Southern Africa, Australia, Belize, Mexico, and the Philippines.

Methods of management vary among the different industries, some proving more successful at balancing the needs of the different stakeholders than others. The whale shark tourism industry at Ningaloo Reef in Australia serves as an example of strict management that has benefited the tourists, the tour guides, and the whale sharks. Roland Mau, a member of the Western Australian Department of Environment and Conservation

(DEC) in Exmouth, Australia, declared in 2008 that “the Ningaloo Whale Shark experience may effectively be described as an ecologically sustainable wildlife tourism industry managed by a government department based on non-consumptive use of wildlife” (Mau 2008).

The DEC regulates the whale shark tourism industry at Ningaloo Reef and has developed a “Code of Conduct for Whale Shark Interaction,” aimed at ensuring both tourist and whale shark safety. For example, the minimum distance from swimmer to whale shark is four meters from the tail and three meters from the head and body, in order to give the animal space to make sharp turns without contacting the swimmer. Boats are not allowed within 30 meters of the whale shark and must not exceed eight knots when within 250 meters of the animal. The DEC staff patrols regularly and responds to complaints of noncompliance (Mau 2008).

Tour operators are required to have a license, and the number of licenses distributed by the DEC is limited to 15 (Caitlin & Jones 2010). A license to operate a whale shark tour is obtained through a rigorous application process termed an “Expression of Interest,” in which a panel of various stakeholders review and score the applicants based on a set methodology (Mau 2008).

Additionally, the DEC educates tourists about the plight of the whale shark and the importance of following the “Code of Conduct” through brochures, posters, an annual “Whale Shark Festival,” and relationships with non-profit groups and their volunteers (Mau 2008). Tour participants pay a small fee, in addition to the ticket price of \$378 USD (Ziegler 2010), which goes directly towards whale shark management and research (Mau 2008).

The management method at Ningaloo Reef in Australia is thought to be the most successful (Zeigler 2010), though other industries have implemented noteworthy strategies. The industry operating in Gladden Spit off the coast of Placencia, Belize, is managed by a non-governmental organization called the Southern Environmental Association (SEA). The 90 licensed guides for 2012 are listed on SEA's website, as are the "Whale Shark Tourism Interaction Guidelines" which include heavy sanctions for noncompliance. Touching a whale shark is a \$10,000 BZD (~\$5,000 USD) offense, and failure to follow any of the guidelines can result in six months in prison (Southern Environmental Association 2012). The industry in Donsol, Philippines, employs a strategy aimed at equal distribution of profits where registered tourists are matched with guides and captains hired on a rotational basis (Zeigler 2010).

The Controversy

It has been hypothesized that encountering a wild animal in its natural environment could lead to a positive appreciation of, and desire to, conserve both the species and its surrounding habitat (Ballantyne et al. 2007). It has also been posited that wildlife tourism, especially whale shark tourism, might help transition local economies from unsustainable consumptive uses of wildlife to more sustainable and less harmful uses (Graham 2004, Stacey et al. 2012). As Ziegler notes, however, there are some who see whale shark tourism as "another form of harmful exploitation of the marine resource" (2010).

Due largely to the dearth of information regarding whale shark behavior and ecology, the verdict is still out as to whether or not interactions with tourists harm the

whale sharks (Colman 1997). Gunn et al. (1999) reported reactions of whale sharks to snorkelers as split evenly between ignoring them to diving slowly away from them. Similarly, Mau (2008) noticed that the while whale sharks would sometimes dive at the sight of boats or snorkelers, they would at other times voluntarily engage in prolonged encounters. Mau (2008) postulated that this difference was situation specific, for the times when the whale sharks would dive was when they were suddenly startled, and the times when they seemed to engage was when it was at their own discretion.

Other evidence points more strongly towards the notion that the interaction with humans is harmful to whale sharks, such as the recent decline in numbers of whale sharks seen at Gladden Spit in Belize. Research has shown that divers negatively influence the courtship and spawning behavior of mutton snapper (*L. analis*) in the area, and thus the eggs on which the whale sharks feed, which is argued to explain the decrease in whale shark presence (Graham 2004). More directly, whale sharks are subject to propeller strike since they spend a significant amount of time near the surface. Fresh propeller scars have been documented on the backs of whale sharks, and these individuals apparently exhibited increased avoidance behavior. Eye-rolling, or rolling the eyes into the back of the head, and banking, or turning away from the threat, have been documented as a result of flash-photography and tourists swimming below the whale shark's head, respectively. Additionally, habituation to humans has been argued to pose a threat to their ability to flee from dangers such as fishermen (Mau 2008).

Quiros directly observed whale shark behavior in response to tourism non-compliance with the established "Code of Conduct" in Donsol, Philippines, and noted that "even with approximately 80% compliance to the regulations, negative short-term

impacts on the whale shark's behavior associated with non-compliance to regulations such as path obstruction, less than 3 m in proximity, and touching have been observed" (2007).

Lastly, a literature review for the DEC in Australia in 2002 revealed the following eight potential impacts of tourism on the whale sharks:

- (1) Disruption of feeding behavior
- (2) Displacement from important feeding areas
- (3) Disruption of mating, reproductive and other social behavior
- (4) Abandonment of preferred breeding sites
- (5) Changes to regular migratory pathways to avoid human interaction zones
- (6) Stress
- (7) Injury
- (8) Mortality (Mau 2008).

There are two primary arguments that whale shark tourism is not a proven source of harm. The first is that whale sharks have been found to display many of the documented avoidance behaviors when tourists are not in the vicinity. According to some researchers, banking, eye rolling and diving happen independent of the presence of tourists (Gunn et al. 1999, Mau 2008). The second argument is that whale sharks, unlike other species, have the ability to escape tourists by feeding elsewhere or diving. It is therefore assumed that if the tourists bothered the whale sharks, they would likely go elsewhere. Photo-documentation showing the same whale sharks returning repeatedly to an area supports the argument that whale sharks are not bothered by the presence of tourists (Mau 2008).

Holbox

The island of Holbox, located north of the Yucatan Peninsula in the State of Quintana Roo, Mexico, is approximately 26 miles long, though the community mostly inhabits a small portion of the western tip. A 2005 survey by the National Institute of Statistics, Geography and Information reported a population of just over a thousand, with a mostly equal division of genders (Cepeda 2008). According to local sources, the community is comprised of locals, or “Holboxeños,” and foreigners, primarily from Europe, who were drawn to the island in the early 1970’s, the same time the island got electricity and potable water deliveries. The foreigners purchased prize plots of land for low prices, and built hotels and other businesses aimed at serving tourists from all over the world.

Holbox is part of the Yum Balam Flora and Fauna Protected Area (APFFYB), an area designated by the Ramsar Convention on Wetlands as a Wetland of International Importance, as it is “a resource of great economic, cultural, scientific, and recreational value, the loss of which would be irreparable” (1971). East of the APFFYB boundary, currents from the Gulf of Mexico and the Caribbean join to create a nutrient-rich upwelling and subsequent production of plankton, attracting a large number of whale sharks, and tourists eager to swim with them, from the months of May to September (CONANP 2008a). In 2009, this area was designated as the Whale Shark Biosphere Reserve.

The Whale Shark Industry on Holbox

The whale shark tourism industry in Holbox began in 2002, though somewhat unintentionally. Fishermen taking tourists to fish the Esmedregal, or Cobia (*Rachycentron canadum*), a fish which often follows larger fish, including whale sharks, to its next meal, found that the tourists were intrigued by the whale shark and eager to know if they could swim with them. As a result, the community of Holbox sought the assistance of the government in developing a regulated industry that has grown substantially over the past ten years (pers. comm., community member). In fact, Holbox is thought to have one of the fastest growing whale shark industries in the world, largely as a result of the island's proximity to Cancun and Playa del Carmen, two popular vacation destinations that also now operate whale shark tours (Ziegler 2010).

The National Commission of Protected Natural Areas (CONANP) issues permits for whale shark tourism in both the APFFYB and the Whale Shark Biosphere Reserve, and the General Direction of Wildlife (DGVS) issues permits for tourism activities outside of the protected areas. Since the whale sharks can conceivably be found in all three areas in any given season, tour operators from Holbox must get three permits in order to legally conduct the tours. CONANP and DGVS are divisions of the Secretariat of Environment and Natural Resources (SEMARNAT), as is the Environmental Protection Agency (PROFEPA), responsible for enforcing the "Code of Ethics," a set of regulations designed to protect whale sharks and tourists alike during the tours (Figure 1). Created in 2003 by various stakeholders, including the community of Holbox, the regulations state that tourists must maintain 2 meters distance from the whale shark, enter

the water slowly from the boat, wear biodegradable sunscreen and life vests, and swim two at a time, always with a guide, among other rules (CONANP 2008b).

Studies of Whale Shark Tourism on Holbox

The whale shark tourism industry in Holbox has been the focus of several studies since its inception. In 2007, the World Wildlife Fund of Central America commissioned Yuri Zenteno to establish a business model that would guarantee financial sustainability of the whale shark tours. Zenteno found that although there were 39 small tour operators (one or two boats), six large tour operators (three or more boats) controlled 60% of the market. Furthermore, small tour operators had an 87% chance of losing money. To balance the market, Zenteno recommended that the small operators form an association, and outlined a financial plan indicating recovered costs by 2011.

A year later, however, in her evaluation of the social and financial impact of the whale shark tourism industry on the community of Holbox, Carolina Cepeda Gomez also noted an inequitable distribution of industry profits, and found that this inequity had divided a once-united community. Though the bonds within groups were strong, the bonds between groups were weak, and this fracture, argued Cepeda, threatened the continued welfare of the Holbox community. Among her recommendations to restore social cohesion were the creation of a single location at which tourists would purchase tickets, an increase in tour price overall, and the improvement of operator training and quality of service (Cepeda 2008).

Jackie Ziegler assessed the sustainability of the whale shark tourism industry in Holbox, also in 2008, using data collected from a survey given to whale shark tour

participants upon completion of the tour. Among other findings, Zeigler discovered that tourists felt too crowded while swimming with the whale sharks, the regulations were not followed, the tourists were not learning, tour advertisements used pictures from locations where water was clearer resulting in tourist disappointment, and tour cost varied substantially among operators (2010). Zeigler also noted the same imbalance in the distribution of industry profits as Zenteno (2007) and Cepeda (2008).

Three types of tourists surfaced from Zeigler's survey data: generalists, intermediate shark tourists, and specialists. Though specialists had the greatest knowledge of the plight of the whale sharks, they were also the most likely to believe that the tours did not harm the whale sharks, to intentionally make contact with the whale sharks, and to support the current level of management which inadvertently allowed them to do so (Zeigler 2010).

Additionally, Zeigler took a first look at how global climate change impacts whale sharks, for as she notes, "to consider the tourism activity in a vacuum exempt from external influences beyond the local scale is short sighted, especially when considering the highly migratory nature of some of the species targeted by tourism activities" (2010). Not surprisingly, Zeigler found that whale sharks are highly susceptible to global climate change, most notably, changes in ocean temperature and circulation, and changes which impact their prey. Furthermore, their slow rate of growth, delayed sexual maturity, and limited number of offspring make whale sharks particularly vulnerable to global changes in the environment, as well as the tourism industry that depends on their predictable aggregation (Zeigler 2010).

Upon completion of her study, Zeigler recommended five changes to the management of the industry including the application of the Precautionary Principle, the improvement of the guide training program, the incorporation of an educational component for tourists, a re-structuring of the industry, and the diversification of the local economy (2010).

Objective

Though past studies on the whale shark tourism industry in Holbox incorporated the perspective of tour operators, their larger goal to either assess the financial sustainability of the industry (Zenteno 2007) or to establish the relationship between natural and financial capital (Cepeda 2008) limited the direct expression of tour operator viewpoints. While Zeigler's findings were substantial and comprehensive, they were largely based on data gathered from tourists. The goal of the present study is to more fully explore the perspective of the tour operators regarding the problems and relevant solutions of the whale shark tourism industry in Holbox.

METHODS

Data collection took place on Holbox from the months of June to August 2012, and included a combination of interviews and observations. A total of six informational interviews of government officials and community members, such as hotel and business owners, was conducted both on the island and in Cancun. These interviews were semi-structured and aimed at gathering an understanding of the relevant laws, policies, and general context of the industry. Information was gathered in an ad-hoc manner as well.

Twenty-one formal, anonymous, semi-structured interviews of guides, captains and managers of tour operations were also conducted (herein collectively called “operators”). Interviewees were gathered using a combination of convenience and snowball sampling methods, and interviews were conducted in non-specific locations throughout the island at varying times. Interview questions were grouped by topic: basic information, cooperatives, tours, trainings, regulations, tourists, agencies, whale sharks, problems, and solutions. A translator was employed for ten of the 21 interviews. One interview was terminated early, and thus discounted, due to incomprehensible responses. Due to varying interest levels and schedules, as well as the nature of the translation process, interviews lasted between thirty and ninety minutes. In addition to interviews, two whale shark tours were observed, one with a large operator (three or more boats), and one with a small operator (2 or fewer boats).

Interview data was transferred into an Excel spreadsheet by question, and each question was analyzed for tendencies in the answers. Subsequently, themes were noted across answers to questions and compared with data from prior studies.

RESULTS

Tour Operators

Just over half of the 20 tour operators interviewed were not born in Holbox. Five originated near Mexico City, five from the Yucatan Peninsula, and one from the United States. The mean length of time on the island for this segment of the population was 18 years, with a minimum of 3.5 and a maximum of 35 years. None of the eleven came to Holbox specifically to work in the whale shark tourism industry.

Some subjects were solely guides, captains, and tour business owners, while others did a combination of the three; the average time in the industry was eight years. Prior to conducting whale shark tours, nine of the 20 were fishermen, six did something else within the tourism sector, two did both fishing and worked in the tourism sector, and three did something other than fish or work in the tourism sector. Tour profits accounted for 50% or more of total income for seven of twelve operators asked. Fifteen of 20 operators reported having another job or business outside of the whale shark tourism industry, including operating other types of tours, driving taxis, renting golf carts, and owning restaurants.

Cooperatives

Of the 20 tour operators interviewed, 16 were part of a tourist cooperative. Cooperatives were reported to range in size from six to 40 members, with a mean of 18 members. Of the four who were not a part of a cooperative, three said they didn't need to seek membership since they were not boat owners, and one said he preferred not to be in a cooperative. Reasons given for being in a particular cooperative included starting a new one, being invited, family and choosing one for a specific perceived advantage.

Tour operators mentioned government loans, job security, strength in numbers, friendship, and financial assistance when ill as the benefits of being a member of a cooperative. All operators said there were no drawbacks to membership.

When asked if members within a cooperative get along, all ten tour operators answered affirmatively. However, when asked if the different cooperatives work together, nine of the 18 operators responded negatively, three said "sometimes," and six

responded positively, though three of these six followed their initial positive responses with comments about competition between cooperatives.

Tourists

Not one operator said that all tourists follow the regulations all the time. While seven of the 20 asked began with an affirmative response, all seven qualified their answers by saying that some proportion of tourists did not follow the regulations. In total, eight of the 20 asked gave proportions that indicate many tourists do not follow the regulations (e.g. 50%, one or two tourists per boat), ten gave proportions that indicate few tourists do not follow regulations (e.g. 5%, one or two tourists in 20 tours), and two did not elaborate.

When asked if those who didn't follow the regulations were of a certain group or type, eight of 20 operators said that men were the ones who do not follow the regulations, and five of these eight specified that it was young or middle aged men. Additionally, eight of the 20 operators said that Italians don't follow the regulations, four said Europeans, two said Mexicans, and three identified other nationalities. Another operator said rich people are the ones who don't follow the regulations, another said those who are Jewish, and two said there was no unifying quality of the tourists who don't follow the regulations.

Government

Agencies

Asked if they felt the government agencies involved in the industry (e.g. SEMARNAT, CONANP, PROFEPA) were doing a good job, the overwhelming majority of operators (17 of 20) responded negatively. The reasons given most often for why the agencies were doing a bad job was lack of presence, response, or action, and that other places operating tours are not held to the same standards. PROFEPA, specifically, was mentioned most often as doing a poor job.

When asked what more these government agencies should be doing, 17 of the 20 said more enforcement. Other responses included wanting agencies to work together, do more research, limit the number of permits or yachts, and improve guide and captain training.

Trainings

Twelve operators were asked when they last attended a training. Most had attended a training within the past six months, though some said it had been over a year. The response range was two months to three years.

The majority of tour operators found the trainings helpful, while opinions of others were mixed. Common complaints were that the trainings are expensive or that certain courses are unsatisfactory.

Of the 17 operators asked, 15 were in favor of more training. More than half wanted more English courses, while others wanted more CPR and rescue courses. Some wanted to know more about the island's biodiversity, while others mentioned wanting to know more about the whale shark or to be updated when new whale shark data emerged.

Regulations

Operators were asked if they felt the regulations were adequate and all gave affirmative responses. However, when asked if there should be more or if there should be any changes to the regulations, nine out of 13 said yes (five wanted to add a regulation and four wanted to change an existing regulation). Some operators wanted to add regulations limiting the number and type of boats, while others felt that existing regulations were not practical, including the distances from boat and tourist to whale shark, and the regulation stating that only two tourists swim with the whale shark at a time. It was argued that having more than two tourists in the water at a time would be better for the whale sharks, as it would decrease the duration of the tour, and thus the total time the whale sharks are disturbed.

When asked if operators tell the tourists about the regulations, eleven of the 16 asked gave an affirmative answer. However, three of the eleven said that the guides relayed only the basic rules and nothing more, including no educational information, and two of the eleven said that most guides tell the tourists the regulations, but not all. Furthermore, two operators said that their guides tell the regulations to their tourists, but that they couldn't speak for everyone. While four operators said that all of the guides tell the tourists the regulations, one of these was the tour guide for the researcher's tour, and he never mentioned the regulations.

Responses to the question as to whether it was one group that didn't follow the regulations or everyone, indicated that it wasn't by group, but rather by individual guide. In fact, two operators said that it was two or three guides that everyone knows. However,

four operators mentioned that all operators from other locations do not follow the regulations.

Of the 17 operators asked, eight said that language got in the way of explaining the regulations to the tourists. However, the researcher, an English-only speaker, had difficulty understanding 13 of the operators she interviewed, suggesting that operators may not think they have trouble communicating, but tourists may be having trouble understanding them nonetheless.

Whale Sharks

When asked if the tours harm the whale sharks, twelve out of 20 said yes, four were undecided or said sometimes, and four said no. However, two of the four who answered negatively proceeded to give examples of how the tours harm the whale sharks. The 12 who said that the tours harm the whale sharks gave the following reasons for why the tours cause harm: tours generally scare or stress whale sharks, tourists harass whale sharks, boats physically harm whale sharks, and engine noise and oil film on water's surface from sunscreen affect habitat. One operator said that he sees whale sharks with skin problems and thinks it is due to the tours. Two operators said that the recent absence of whale sharks in Cabo Catoche is evidence that the tours harm the sharks, and two others said that if things do not change, the whale sharks will not come back.

Conversely, other operators refuted claims that the tours harm the whale sharks by saying that tourists, engines, sunscreen and the like do not bother the whale sharks, as is evident by their disregard. Finally, two operators argued that the tours help the whale

sharks by bringing awareness to the plight of the species and by making them more valuable as tourist attractions than as meat.

Operators were asked if they see the same number of whale sharks now as they did when they first started doing the tours. While 9 of the 20 asked gave a definitive no, five gave a definitive yes, one said there are more whale sharks now, and five operators said it wasn't a linear progression. Instead, these five noted fluctuations in both population size and location of the whale sharks based on changes in environmental conditions (e.g. red tide). It should be noted that potentially obfuscating the responses is the fact that operators may have been referring to two different locations where whale sharks are seen. For instance, ten of the operators mentioned that there have been few or no whale sharks in Cabo Catoche recently and five said that there are more or that they are now only found outside of the Whale Shark Biosphere. When asked how long this phenomenon had been happening, the range in response was less than a year to six years, and the median was two years.

Responses to whether or not the behavior of the whale sharks had changed over time indicated that the intent of the question was not well understood by most, however, seven operators seemed to say that the behavior of the whale shark had not changed over time. Those who felt that the whale sharks' behavior had changed reported that they now swim or dive away from tourists, are generally more scared, shy or stressed, and one operator reported seeing whale sharks blinking lately, a possible avoidance behavior.

DISCUSSION

Several factors limited the research process. Because of the delay in approval from the Institutional Review Board, time available for interviews was compressed, hindering the snowball effect and the diversity of the sample. Another limitation was the language barrier between the researcher and the community, particularly the interviewees. Though a translator was employed, it was likely that not everything was relayed accurately or completely. Finally, it is important to note potential bias in tour operator responses. Though Holboxeños are characteristically straightforward (pers. comm., community member), the nature of self-reporting can lead to partial or biased responses.

Analysis of the data reveals three issues and the problems associated with each: (1) Poor communication between operators and tourists and operators and government agencies has contributed to the absence of information and misinformation, respectively; (2) Failure of the government to provide desired support has led to operator dissatisfaction with and resentment toward the government agencies involved; (3) Pervasive rivalry within the operator community exists, largely explained by the division of the broader community due to unequal distribution of wealth.

Issue 1: Poor Communication

The data suggest that communication between tour operators and tourists is poor. Though eleven of the 16 operators felt that the guides do tell the tourists the regulations, seven of these eleven responses suggest a less positive reality. For example, two of the seven operators suggested that most, not all, guides tell the tourists the regulations, and

two others made it clear that they could only speak affirmatively for the guides they worked with. The remaining three felt that only the basic regulations and nothing more, including information about the whale sharks, were conveyed to the tourists.

That a majority of operators do not speak a language aside from Spanish also indicates that communication between operators and tourists is unclear at best. Of the 17 operators asked, eight admitted that language was a barrier to communicating with tourists. However, observation suggests that 13 of the 17 were not easily understood by a non-Spanish speaker. Additionally, nine of the 17 wanted more training in the English language, suggesting a lack of proficiency. Moreover, a 2010 study similarly concluded that only 10% of guides were able to speak a language other than Spanish (Zeigler).

The observation that not all operators seemed comfortable communicating with tourists also suggests that neither the regulations nor any educational information is being consistently disseminated by operators to the tourists. Only eight of the 20 asked reported having experience in the tourism industry before conducting the whale shark tours, and eleven of the 20 said they were previously fisherman, a profession that doesn't necessarily require nor develop the kind of people skills needed to enforce regulations or educate others. One of the operators mentioned that "some guides are very shy and don't like speaking," and when asked what would solve this problem, the operator said "give them confidence." These findings confirm a lack of comfort by tour operators in taking a leadership role, as was reported in a previous study (Zeigler 2010).

Given the fact that communication between operators and tourists is ineffective or nonexistent, it is not surprising that the data also reveal that the tourists are neither following the regulations nor learning anything from the tours about the whale shark.

Each of the 20 operators interviewed reported having seen tourists not following the regulations. Furthermore, eight of the 20 reported frequencies that suggest many tourists don't follow the regulations often, including as many as 50% of the total tourist population and as often as one or two tourists per boat.

Personal observation of tours contributes further evidence of how a lack of communication between operators and tourists can lead to the failure of tourists to follow the regulations or learn anything about the whale shark. A tour on June 30, 2012 was conducted by one of the largest operations on the island, and though the guide spoke English well, the regulations were never mentioned, nor were they printed on the boat. Tourists were observed putting on non-biodegradable sunscreen and quickly entering the water, sometimes five at a time; one tourist was overheard saying she tried to touch the tail of a whale shark. Other boats were observed dropping more than the allowed number of tourists into the water, often to swim with an already occupied whale shark.

Previous studies have also documented tourist non-compliance with the regulations and a lack of information provided by tour guides (Cepeda 2008, Zeigler 2010). One study concluded that more than the allowed number of tourists were interacting with a single whale shark for over a quarter of the tour's duration, that one quarter of surveyed tourists were making physical contact with the whale sharks, and that there was "no substantial information provided to tourists regarding the whale shark biology/ecology, threats to the sharks or ways to get involved in whale shark conservation," (Zeigler 2010).

The data also suggest poor communication between the tour operator community and the government agencies involved in the whale shark tourism industry. Operators

repeatedly described having tried to contact government agencies or officials but to no avail. For instance, one guide sent a letter with feedback about the trainings and three different guides sent videos or pictures of regulation non-compliance to CONANP, PROFEPA and/or SEMARNAT, but none of the four ever received a response.

Additionally, it was noted by some operators that the government is physically removed from the industry, and therefore unable to “see the environmental impact because they are in Mexico City” or “in their office all the time.” One guide mentioned that CONANP used to be on the pier each day, not only to ensure the correct number of tourists per boat and to verify that the operators had the necessary permits, but also to record information that the operators had gathered such as the number and gender of whale sharks seen. However, now that CONANP is absent, “there is no one to tell when he sees someone doing something wrong.”

Unsurprisingly, the lack of communication between operators and government officials leads operators to presume that the government is indifferent: “It’s not that the government doesn’t have money, it’s that they don’t have an interest. They don’t care. The government has people and boats in Cancun and they don’t send them.” Other operators claimed that SEMARNAT routinely issues permits to operators they know don’t follow the regulations, and that several reports have been made regarding “all of the problems” to the Director of the APFFYB but that “he doesn’t do anything.”

The lack of communication also leads to misinformation, much of which further fuels the negative opinion the operators have of the government agencies. For instance, several operators complained that PROFEPA doesn’t regulate yachts, when in fact, private boats don’t fall under PROFEPA’s jurisdiction (pers. comm., government

official). Similarly, many operators expressed frustration at being held to different standards than those who operate out of Isla Mujeres or Cancun. They seemed to be under the impression that only operators from Holbox are required to get permits or attend trainings, neither of which is the case (pers. comm., government official). Government agencies, in failing to effectively communicate, are giving operators even more of a reason to be displeased with their work.

Issue 2: Absent Government

The overwhelming desire of the operators for more government support also emerged from the data. Of the 17 asked, 15 operators wanted more and better training, including courses in English, CPR and rescue, as well as the ecology and biology of the whale shark and other species native to the area. Additionally, 17 of the 20 operators wanted more government enforcement of the regulations, including the imposition of fines and penalties. In fact, when asked what should be done about tourists not following the regulations, two operators said there should be penalties for the tourists, and four operators said there should be penalties for the guides of the non-compliant tourists, signifying the level of desire and willingness to increase operator accountability. Four of the five operators asked said they were willing to personally contribute to fund an increase in the presence of enforcement agents. Ten of eleven operators were in favor of re-implementing a program where operators contributed roughly 20 pesos per tourist to the government for more enforcement, despite some reports that the government had never used the money as it had promised.

Unfortunately, this desire for more government support has not been met, demonstrated by the fact that the overwhelming majority (17 of 20) of operators felt the government agencies were not doing a good job. In fact, lack of presence was the most common reason given for why the operators were so disappointed. Furthermore, studies from 2008 and 2010 also noted that government enforcement of the regulations was non-existent, suggesting five years of the same problem (Cepeda 2008, Zeigler 2010).

Further compounding the problem is the fact that government agencies have not only failed to provide the support the operators are requesting, but have increased the number of permits given over the years. In fact, a study done by CONANP in 2010 determined a carrying capacity of 160 permits, yet despite orders from Instituto Nacional de Ecología to adhere to the carrying capacity, the number of permits distributed in 2012 was 205 (pers. comm., government official). Given such long-term and blatant disregard of requests for help, it is not surprising that operators expressed resentment of the government agencies. As one guide aired, “PROFEPA has been telling us that they would start doing something. But they haven’t done anything,” and two other guides mentioned that the only times they see PROFEPA is when PROFEPA officials are out taking their family and friends to swim with the whale sharks.

Issue 3: Pervasive Rivalry

Analysis of the interview data revealed a pervasive sense of rivalry, or an “us versus them” mentality among the tour operators. For instance, when asked if the various cooperatives worked together, six operators, most part of or themselves a small operation, had something negative to say about VIP Holbox, one of the largest operations on the

island, considered by many to be monopolizing the market. Comments such as, “they are called VIP but the service is not good at all. They sell the tours really cheap. The captains and guides aren’t good” and, “the tourists don’t know that they sell one thing and do another. They see VIP and think it is a VIP service but it isn’t – the boats are old,” reveal the hostility felt by small operators towards large operators. The reverse is true as well, for a large operator noted “the small guys are always looking for someone to be angry with and to blame. All independent small guys are going to tell you that the big guys don’t follow the rules. But the big guys give you a better service. The little guys say the competition is unfair (but) the big guy is more professional.”

Indeed, some operators demonstrated how rivalry can fuel the blaming of others, as noted in the comments about who does and does not follow the regulations. Two operators said the guides they worked with followed the regulations, but could not speak for everyone else, and another said that the new operators are the problem, not the ones who have been doing the tours since the beginning. The persistent theme that problems are the fault of someone else is also evidenced by negative comments regarding the operators from Isla Mujeres and Cancun. According to Holbox operators, operators from elsewhere are the ones who put too many tourists in the water, don’t respect the regulations, have boats that are too big, use diesel engines, and generally “do it differently there [Isla Mujeres] and not for the better.”

Another strong rivalry exists between those operators who are and are not originally from Holbox. Three non-local operators mentioned certain restrictions they had faced due to their status, such as not being able to attend the trainings or be the president of their cooperative. One of these operators hinted at a source of the tension by saying

“the locals say that foreigners are going to take the jobs – and yes, they are right. We are here to take the jobs.” The feeling of the local operators about the non-local operators is that “since they are not from here they don’t respect the area and shouldn’t be guides.”

The same anti-foreigner sentiment was revealed when operators were asked if there was a common trait uniting those tourists who did not comply with the regulations. While only two operators mentioned that Mexican tourists don’t follow the regulations, 15 operators mentioned that tourists from other parts of the world, including Italy, Europe, Germany, Argentina, and Spain, disobey the regulations.

Given the pervasiveness of the “us versus them” mentality among the operators in Holbox, it is not surprising that the data also revealed division within the tour operator community. Tourist cooperatives have split over the years so that there are now at least 13 cooperatives, a high number given the population of the island. Of the 15 operators asked, six had started their own cooperative, for as one operator said, “they have conflicts with the members of the original cooperatives so they decided to split and make their own.” The result is a strong bond within cooperatives, but a weak bond between cooperatives. For instance, all ten operators asked said that members within cooperatives get along with each other, and these ten operators represented six different cooperatives. However, nine of the 17 operators who were asked if the different cooperatives work together said they do not, and three said only sometimes.

Previous studies have also noticed this division among the tour operator community as well as the community at large (Zeigler 2010, Zenteno 2007), including the strong ties that exist within groups but not between groups (Cepeda 2008). However, the community has not always been divided, and in fact, was once known as a

community that worked well together in the pursuit of common interests, such as their success in attaining the designation of the Yum Balam Flora and Fauna Protected Area (APFFYB) (Cepeda 2008). As some in the community began to have more money than others from the sale of land and the unequal distribution of tourism profits, the unity that once characterized the community gave way to envy and competition (Cepeda 2008).

RECOMMENDATIONS

Previous Recommendations and Challenges to Implementation:

Previous studies have recommended changes that would significantly diminish the current problems of the whale shark tourism industry on Holbox. However, observation suggests that few, if any, have been implemented, and data from this study help to explain why.

Zenteno's (2007) now five year-old recommendation for small operators to form an association to gain strength in numbers and turn a profit has not happened. This is likely due to the pervasive rivalry and division within the tour operator community, noted first by Cepeda in 2008 and again by Zeigler in 2010, and confirmed by this study. Similarly, the recommendations for a single location where tourists would purchase tickets and the assignment of these tourists to an alphabetical rotation of guides and captains, intended to address competition and the unequal distribution of industry profits (Zeigler 2010, Cepeda 2008), have also not been implemented thus far. The disparity in financial investment, wealth and power between small and large operators, as observed in this study and noted previously in others (Cepeda 2008, Zeigler 2010, Zenteno 2007), provides insight as to why efforts to restructure the industry in the interest of the small

operators have not occurred. One guide from a large operation noted in an interview, “every year they try to have the ticket window but that isn’t fair. They can’t! This is capitalism!” Another guide revealed a similar sentiment by stating, “the operator that has more people can give a better price, etc. It wouldn’t be fair for that operator to give anyone else his people. This is not communism.”

Ideally, the industry would have been structured to promote equal opportunity from the start. However, given the progression of the whale shark industry on Holbox into the current reality of those who have been successful and those who have not, efforts to encourage more competition, not less, may be the optimal way to achieve sustainability. Of course, coupling this encouragement of competition with the addition of alternative sources of income for operators who fail, the latter first suggested by Zeigler (2010), would best serve the entire community of Holbox.

Finally, prior recommendations for the government to implement the Precautionary Principle (Zeigler 2010) and to improve guide training (Zeigler 2010, Cepeda 2008) have also not seen fruition. Operators in this study suggested that the government lacks an interest in solving the problems facing the industry, and some implied that the government favored financial gain, both from profits and contributions, over community welfare or conservation, though these claims were never verified by the researcher. Alternatively, reports from various sources indicate that there is no funding for the government agencies essential to many of the suggested solutions. PROFEPA, for example, has 8-15 employees responsible for enforcing environmental laws in the entire state of Quintana Roo (pers. comm, government official), which includes such popular tourist destinations as Cancun, Isla Mujeres, Cozumel, Playa del Carmen and Tulum.

Regardless of reason, observation suggests that recommendations reliant upon government action have not been implemented.

Consequent Recommendations:

Unfortunately, division within the community and the lack of motivation or ability of the government to take action have limited prospects for implementing the substantial changes needed to achieve industry sustainability. Until these realities evolve, immediate efforts should focus on the remainder of the equation: the tourists. With the involvement of a third party, namely non-governmental organizations, minor changes focused on altering tourist behavior and providing a conservation-inspiring education should be achievable.

A substantial amount of information exists specifically about the tourists who visit Holbox to swim with the whale sharks, including the fact that they are highly motivated to learn. In addition, it has been suggested that if the tourists are told why there are regulations and given a picture or description of the avoidance behaviors that can result from non-compliance, they would be inclined to act in a way that minimizes the chances of being personally responsible (Zeigler 2010). This information should not be wasted, nor should the opportunity to engage tourists in whale shark conservation.

Therefore, since communication between operators and tourists is unreliable, printed educational material, translated into different languages, should be mandatory on every boat in the form of re-usable laminated booklets. The boat ride from Holbox to where the whale sharks have been seen lately lasts over an hour, providing ample time and a captive audience. There are a few operations already providing printed material

onboard (Figure 3); these operations should be applauded, and their materials used for reference. In order to fund booklets for those who do not already have them, non-governmental organizations could be approached for grants. Ecocean or other citizen-scientist organizations might be interested in contributing in exchange for the chance to advertise their missions and increase participation in their programs.

Similarly, in order to address the fact that tourists are not following the regulations due to a lack of communication between tour operators and tourists, the posting of regulations should be ubiquitous on the island, and non-governmental organizations could make this possible. Such organizations could fund the creation of cards to be displayed in hotel rooms, insertions in restaurant menus, or murals on walls throughout the main square, all of which would present the regulations in as many languages as possible. There are some signs currently, but not enough to guarantee that tourists will see them before taking the tour, and the only sign at the pier, where most of the tours depart, is ineffective at attracting attention to the regulations or the importance of adhering to them (Figure 2). Since over 80% of tourists visit Holbox to swim with the whale sharks (Zeigler 2010), it would be appropriate to have frequent signage about the regulations, and eleven of the thirteen operators asked in this study supported the idea. Of course, this would not ensure that every tourist complies with the regulations, for as many operators noted, some tourists are simply determined to touch a whale shark. However, the likelihood of tourists not complying with the regulations due to an inability or reluctance of the operator to communicate them would be eliminated. Furthermore, such visible attention to the regulations on the island would signify their importance to the

community whose livelihoods depend on the continued existence of the species, and might even encourage tourists to regulate one another.

Though not substantial enough to guarantee industry sustainability, these changes are significant none the less, and do not face the same limitations to implementation as those previously recommended.

CONCLUSION

The uncontrolled growth of the whale shark tourism industry in Holbox, Mexico has led to the development of several problems, some of which threaten the continued existence of the industry itself. The regulations designed to ensure the safety of both the tourists and the whale sharks are neither being followed nor enforced, tourists are departing the island uninspired to conserve the threatened species, and the once-united community of Holbox is being divided by the inequitable distribution of industry profits.

While there are ways to minimize or work around some of these problems, a more substantial change is needed in order to attain sustainability. Unfortunately, such change is dependent upon that which seems unlikely in the near future. For the whale sharks to be successfully managed as a public resource, the government would need to be considerably more involved, most notably in setting and enforcing firm limits.

Communal management is equally improbable as it would require the reunification of the Holbox community, and, at present, the majority of tour operators are not making enough money to even be motivated to want to conserve the species. Third-party management, perhaps the most ideal solution, is also not possible due to prohibitive laws (pers. comm., government official).

The United Nations World Tourism Organization recently announced that the world had reached one billion international tourists (2012), rendering the current management model, as expressed by a government official in an interview, that “every Mexican has a right” to conduct whale shark tours, even more problematic. The future of the whale shark tourism industry in Holbox may therefore lie in the hands of the tourists, and the direction in which they push the industry. Therefore, immediate efforts to cultivate this potential are vital.

REFERENCES

- Ballantyne, R., J. Packer, K. Hughes, and L. Dierking. "Conservation Learning in Wildlife Tourism Settings: Lessons from Research in Zoos and Aquariums." *Environmental Education Research* 13.3 (2007): 367-83. Print.
- Brooks, Katie, Simon J. Pierce, Daniel Jouannet, and Michel Vely. "Seeing Spots: Photo-identification as a Regional Tool for Whale Shark Identification." *Western Indian Ocean Journal* 9.2 (2010): 185-94. Print.
- Catlin, J., and Jones, R. (2010). Whale shark tourism at Ningaloo Marine Park: a longitudinal study of wildlife tourism. *Tourism Management*, 31(3), 386-394
- Cepeda G., C. (2008). Relación entre el capital natural y el financiero con el bienestar de la comunidad de Holbox en Quintana Roo, México. MSc Tropical Agricultural Research and Higher Education Center (CATIE), Turrialba, Costa Rica.
- Colman, J. G. "A Review of the Biology and Ecology of the Whale Shark." *Journal of Fish Biology* 51.6 (1997): 1219-234. Print.
- Comisión Nacional de Áreas Naturales Protegidas (CONANP). (2008a). Porque nos visitan: Distribución global del dominó. Retrieved December 18, 2012, from www.domino.conanp.gob.mx
- Comisión Nacional de Áreas Naturales Protegidas (CONANP). (2008b). Reglamento: código de ética Isla Holbox, Quintana Roo. Retrieved December 17, 2012, from www.domino.conanp.gob.mx
- Convention on Wetlands of International Importance especially as Waterfowl Habitat. Ramsar (Iran), 2 February 1971. UN Treaty Series No. 14583. As amended by the Paris Protocol, 3 December 1982, and Regina Amendments, 28 May 1987. Retrieved December 17, 2012 from www.ramsar.org
- Davis, Derrin. "Whale Shark Tourism in Ningaloo Marine Park, Australia." *Anthrozoos* 11.1 (1998): 5-11. Print.
- ECOCEAN. (2012). Whale shark photo-id library. Retrieved December 17, 2012, from www.whaleshark.org
- Graham, Rachel T. "Global Whale Shark Tourism: A "Golden Goose" of Sustainable and Lucrative Income." *Shark News* 16 (Oct. 2004): 8-9. Print.
- Gunn, J. S., J. D. Stevens, T.L. O. Davis, and B. M. Norman. "Observations on the Short-term Movements and Behavior of Whale Sharks (*Rhincodon Typus*) at Ningaloo Reef, Western Australia." *Marine Biology* 135 (1999): 553-59. Print.

- Mau, Roland. "Managing for Conservation and Recreation: The Ningaloo Whale Shark Experience." *Journal of Ecotourism* 7.2&3 (2008): 213-25. Print.
- Norman, B. "Rhincodon Typus." (*Whale Shark*). Feb. 2011. Web. 15 Apr. 2012. <<http://www.iucnredlist.org/apps/redlist/details/19488/0>>.
- Quiros, A.L. (2007). Tourist compliance to a Code of Conduct and the resulting effects on whale shark (*Rhincodon typus*) behavior in Donsol, Philippines. *Fisheries Research*, 84(1), 102-108.
- Southern Environmental Association. (2012). Whale shark tourism interaction guidelines. Retrieved December 17, 2012, from www.seabelize.org
- Stacey, Natasha E., Johanna Karam, Mark G. Meekan, Samuel Pickering, and Jotham Ninf. "Prospects for Whale Shark Conservation in Eastern Indonesia Through Bajo Traditional Ecological Knowledge and Community-based Monitoring." *Conservation and Society* 10.1 (2012): 63-75. Print.
- United Nations World Tourism Organization. (2012). UNWTO Welcomes the World's One-billionth Tourist. Retrieved December 28, 2012, from www.unwto.org
- Wilson, S.G., J.J. Polovina, B.S. Stewart, and M.G. Meekan. "Movements of Whale Sharks (*Rhincodon Typus*) Tagged at Ningaloo Reef, Western Australia." *Marine Biology* 148.5 (2006): 1157-166. Print.
- Zenteno, I.Y. (2007). Análisis de alternativas económicas sostenibles en la isla de Holbox como sitio de influencia en el Arrecife Mesoamericano. Proyecto ICRAN-MAR. Modelo de negocios para determinar la viabilidad financiera de la actividad económica del Tiburón ballena en Holbox. Preparado para WWF Centroamérica, Abril.
- Ziegler, Jackie. (2010). Assessing the Sustainability of Whale Shark Tourism: A Case Study of Isla Holbox, Mexico (Master's thesis). Retrieved from http://dspace.library.uvic.ca:8080/bitstream/handle/1828/3191/Ziegler_Thesis_2010.pdf;jsessionid=4294292E696CEF5C3A60D5C5E807B8D2?sequence=3

Figure 1



Source: <http://www.domino.conanp.gob.mx/senales.html>

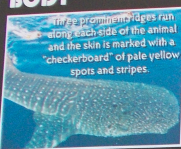
Figure 2



Figure 3

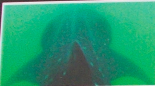
BODY

The pectoral membranes run along each side of the animal and the skin is marked with a "checkerboard" of pale yellow spots and stripes.




A streamlined body and a depressed, broad, and flattened head characterize the whale shark.

PECTORAL AND DORSAL FINS

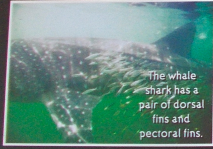


The first dorsal fin is larger than the second dorsal fin, and set rearward on body. The two lobed caudal fin (tail) is semi-lunate in adults; in small juveniles the upper lobe is considerably longer than the lower lobe.


CAUDAL FIN



The whale shark has a pair of dorsal fins and pectoral fins.

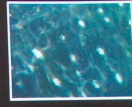


The caudal fin (tail) is very large, semicircular and very powerful, gives propulsion and can measure more than 2.5 meters from side to side.



TEXTURE

Whale sharks are greyish bluish or brownish above, with an upper surface pattern of creamy white spots between pale, vertical and horizontal stripes.

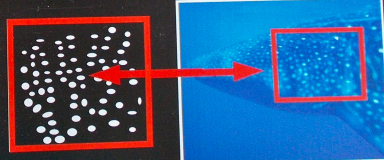


These spots are unique to each individual and are useful for counting population.

SKIN

The function of the distinctive pattern of body mark is unknown. Many bottom-dwelling sharks have bold and disruptive body markings that act as camouflage through disruptive coloration. The whale shark's markings could be a result of its evolutionary relationship with bottom dwelling carpet sharks.

IDENTIFICATION



Distinctive markings in a pelagic species could be linked to social activities such as postural displays and recognition processes. Another possibility is that these pigment patterns could be an adaptation for radiation shielding, important in a species that may spend a significant proportion of time in surface waters possibly exposed to high levels of ultraviolet radiation.

REGLAS DEL TIBURON BALLENA WHALE SHARK RULES

- 1 CHALECO SALVAVIDAS OBLIGATORIO
LIFEVEST MANDATORY
- 2 DISTANCIA MINIMA ENTRE EL TIBURON Y EL NADADOR 3m
MINIMUM DISTANCE BETWEEN WHALE SHARK AND SWIMMER 3m
- 3 DISTANCIA MINIMA ENTRE EL TIBURON Y LA LANCHETA 10m
MINIMUM DISTANCE BETWEEN THE BOAT AND THE WHALE SHARK 10m
- 4 GUIA OBLIGATORIO
GUIDE MANDATORY
- 5 ENTRADA CONTROLADA
ENTER SLOWLY FROM THE BOAT INTO THE WATER
- 6 BLOQUEADORES Y ACETES BIODEGRADABLES
BIODEGRADABLE SUNSCREEN AND LOTION
- 7 COMO MAXIMO 3 PERSONAS EN EL AGUA
3 PERSONS IN THE WATER ALLOWED
- 8 NO TOCAR AL TIBURON BALLENA
DO NOT TOUCH THE WHALE SHARK
- 9 NO USAR FLASH
FLASH NOT PERMITTED
- 10 NO PESCAR
NO FISHING
- 11 NO TIRAR BASURA
DO NOT THROW TRASH
- 12 NO ALIMENTAR A LOS PECES
DO NOT FEED THE FISH

