

Title Page

Title: The Sea Through the Looking Glass - An Interpretive Workshop for Snorkel Operators in the Mombasa Marine Park and Reserve, Kenya

Authors: Sander D. den Haring^{1,2} (last name is den Haring),

sander.denharing@my.jcu.edu.au

Margaret Gooch³

Margaret.Gooch@gbrmpa.gov.au

Stephen Sutton¹,

stephen.sutton@jcu.edu.au

Affiliations: ¹ James Cook University, School for Earth and Environmental Sciences,
Townsville, Australia

² CORDIO East Africa, #9 Kibaki Flats, Kenyatta Beach, Bamburi Beach
P.O.BOX 10135 Mombasa 80101, Kenya

³ Great Barrier Reef Marine Park Authority, Townsville, Australia

Corresponding

Author: Sander D. den Haring

PO Box 10200, Mombasa, 80101, Kenya

t: +254 711748606

e: sander.denharing@my.jcu.edu.au

Abstract

In this paper we describe the process of designing and delivering an interpretive training program for the snorkel industry in Mombasa Marine Park and Reserve. The training was designed and delivered via three workshops to a total of 143 participants during June 2011 and May 2012. Workshops consisted of expert presentations, group discussions and role-play scenarios. The purpose of the workshops was to encourage pro-environmental behaviour of park visitors, through the implementation of high quality interpretation. Other objectives of the training program were to enhance visitor experiences and levels of satisfaction, and to build sustainability of the snorkel industry in the Mombasa Marine Park and Reserve. A major output of the workshops was the creation of a code of conduct created by members of the snorkel industry. One challenge the program faced was ensuring that the snorkel industry continued to use the interpretive materials.

Keywords: interpretation, snorkelling, behaviour, marine park management

Introduction

Natural resources are used by numerous user groups in a multitude of manners (Hammit and Cole, 1987). This use can stem from a recreational, sport, challenge, excitement or socialization nature and activities could include: camping, hiking, fishing, snorkelling, and scuba diving to name but a few (Orams, 2000). Any resource use, regardless how minimal the use is, can lead to negative impacts (Marion and Reid, 2007, Madin and Fenton, 2004, Leung and Marion, 2000).

The Snorkel Industry in the Mombasa Marine Park and Reserve

Snorkel excursions are a popular recreational pastime along the Kenyan coastline. In the Mombasa Marine Park and Reserve there are approximately 30 active snorkel boats at any one time. Each snorkel boat can have up to three crew associated with it. Each boat has a capacity of 15-30 passengers and the boats frequent one of three destinations for their daily excursions that include snorkelling. There is no code of conduct governing the snorkel excursions other than the rules and regulations of the Mombasa Marine Park and Reserve and, unfortunately, resources to enforce these rules are often lacking. The lack of enforceable rules results in excessive fish feeding of non-natural dietary foods, damage to corals as passengers touch, walk on and/or break corals, and overcrowding of the destinations frequented by snorkel boats. Previous research exploring the behaviour of snorkelers during these snorkel excursions has revealed that snorkelers and snorkel guides make frequent contacts with the reef substrate (den Haring, 2014). Furthermore, the passengers are often not presented with a briefing, and any transfer of knowledge or information is lacking. Essentially, the snorkel boats currently act as modes of transportation only, rather than educative excursions. There is great potential for these snorkel boat excursions to

offer more. The main conclusion of this study indicated that these contacts are misguided and require direction towards more utilization of dead substrate and seagrass substrate (fewer damaging contacts with the substrate).

One method of managing these resources is to influence the behaviour of visitors so that it is less damaging to the environment. Interpretation is a tool that can be used to bring about behaviour change (Skanavis and Giannoulis, 2009, Mayes and Richins, 2008, Ballantyne and Packer, 2005). Interpretation is the process of conveying a message to someone so that that person gains a better understanding of the issue at hand. Effective, interpretation can also facilitate behaviour change. An important component of interpretation is that it is multi-sensory and based on positive experiences. This paper describes how interpretive efforts were brought about in the Mombasa Marine Park and Reserve to create more pro-environmental snorkelling behaviour and reduce damaging contacts with the reef substrate. The next section provides a more detailed description of effective interpretation.

Theoretical Framework - Interpretation

The process of interpretation is designed to make the recipient aware of meanings and relationships between them and the natural environment, and also stimulate interest and enthusiasm (Luck, 2003, Moscardo and Pearce, 1986). Interpretation often includes first-hand experiences with natural environments (Zeppel, 2008), and it, “assists the visitor to appreciate the area” (Weiler and Davis 1993, quoted in Luck 2003 p.943). Interpretation has been called the “key to ensuring the quality of the tourism experience” (Moscardo 1996, p. 376). Interpretation programs use a variety of methods to get a message across to an audience (signs, trails, brochures, guides and

visitor centres) (Zeppel, 2008). Interpretation programs seek to stimulate interest, promote learning, guide visitors in appropriate behaviour, and encourage enjoyment. Interpretation programs that include all these characteristics can influence visitor attitudes and behaviour, and result in changes to both (Zeppel, 2008, Mayes and Richins, 2008, Moscardo et al., 2004, Luck, 2003). The resultant influence of successful interpretation can then have one of three outcomes: change existing attitudes, reinforce existing attitudes or create a new attitude towards a particular behaviour (Ham, 2007). Interpretation programs have also been shown to increase enjoyment (Moscardo, 1998, Orams, 1996).

Interpretation includes the delivery of information, however, information alone is not enough to prompt behaviour change. The assumption that the provision of information alone is sufficient to change behaviour has been widely disproven by numerous studies (e.g. Hungerford and Volk 1990, Ballantyne and Packer 2005, Stern 2005). Rather, information is one of the necessary components that contribute to effective interpretation (Orams 1996, Moscardo, Woods et al. 2004, Zeppel and Mouloin 2008). Forestell (1993) mentions, “knowledge without behaviour leaves no discernable trace of change. In the long run, behaviour without knowledge will only last until the next fad” (p. 277). Tilden and Craig (1977) state that the aim of interpretation is, “not instruction but provocation” (p. 9), a belief shared by other researchers as well (Ham, 2007, Moscardo, 1996, Hammitt, 1984).

Gaps in Current Interpretation Programs

Interpretation programs already exist in numerous (marine) protected areas but few have been evaluated for effectiveness, creating a need for further research into the

role that these interpretation programs play (Pomeroy et al., 2004, Luck, 2003, Orams, 1997). However, to be effective, interpretive programs require careful design and implementation. An understanding of the learning process and underlying behaviour theory is crucial so that interpretation campaigns can be directed effectively and in an enticing manner (Darnton, 2008, Orams, 1997, Orams, 1996). Educational psychology has been researched thoroughly, however, little of this has been put to use in the environmental interpretation and management field (Orams, 1994).

Aims of this Study

An interpretive workshop, termed ‘The Sea Through the Looking Glass’, was designed to transform ‘transportation-only’ trips into educative excursions aimed at creating more pro-environmental snorkel behaviour. The workshop was open to all members involved in the snorkel industry in the Mombasa Marine Park and Reserve. This interpretive workshop incorporated an understanding of behavioural theory, interpretation design and local knowledge of the geography (the Mombasa Marine Park and Reserve, and the community) to create a successful program. The workshop aimed to transform these excursions into environmentally aware excursions.

The target audiences of the interpretive workshop were all the snorkel operators and associated members within the Mombasa Marine Park and Reserve. Selected members of the park’s management authority, the Kenya Wildlife Service (KWS) marine team and customer care department, were also invited to attend to allow more collaboration between KWS and the coastal communities in the future. The goals of the workshop were threefold:

1. To protect and conserve the marine environment through the usage of pro-environmental techniques.
2. To enhance the satisfaction of the clientele using the snorkel excursions by transforming the snorkel excursions into interpretive excursions manned by a professional crew.
3. To enhance the small-scale snorkel operations in the park.

Materials and Methods

Study Site

This training workshop was conducted in the Mombasa Marine Park and Reserve, Kenya. The park is located north of Mombasa island and spans nearly 15 kilometres of coastline. The park covers a total of 210 km² (200 km² for the Reserve and 10 km² for the Park). Recreational activities such as sailing, scuba diving and snorkelling, are permitted in both the park and reserve. All snorkelling excursions that are included in this study were conducted in the Mombasa Marine Park.

Most snorkel excursions in the Mombasa Marine Park and Reserve are locally owned and are small-scale businesses. Usually a single person owns a snorkel boat and uses a crew to deliver the snorkel excursion. Often times the owner of the boat is not involved in the snorkelling excursion and exists only to collect a daily amount of revenue from the crew, resulting in poor maintenance of the snorkel boat and the use of sub-standard snorkelling equipment. The crew does not have the resources to supply quality equipment nor to properly maintain the boat. There is also no incentive for the crew to invest in equipment or maintenance, as they have no ownership in the boat. There are also some snorkel excursions that are offered by some hotels along the

coastline of the Mombasa Marine Park and Reserve. The businesses that supply the snorkel excursions for these hotels are usually bigger and better financed than the ‘one-man shows’ described above. These businesses can afford to invest in boat maintenance and quality snorkel equipment. These businesses have a definite advantage over the ‘one-man shows’.

All snorkelling excursions that are included in this study were conducted in the lagoon of the Mombasa Marine Park. Bamburi Coral Garden is a lagoon patch reef visited by snorkel operators as part of their excursion. The site has a maximum depth of 7m within the middle of an oval area that shallows out to a depth of 1m around the edges. This core area has a length of ~50m and a width of ~30m. This core area, and the surrounding ~40m in all directions (depth range is 0.5-1.5m), is where the snorkelling activities occur. At any moment there are ~25-30 snorkel boats operating within the park depending on any ongoing maintenance.

Overview of the training Workshop

Three workshops, each comprising around fifty participants, were delivered in June 2011 (105 participants) and May 2012 (38 participants). A total of 143 individuals participated in the workshops that consisted of expert presentations, group discussions and role-play scenarios (see the Appendix 1 for a detailed program outline). Each of these components was created based on salient beliefs (Table 1) identified in previous research (den Haring 2014). Appendix 2 shows examples of these salient beliefs incorporated into the workshop materials.

Table 1. Salient beliefs of snorkelers in the Mombasa Marine Park, Kenya (den Haring, 2014).

Salient Belief	Type of Belief
Reef Protection is an advantage when not contacting the living reef	Behavioural belief
Guides would approve of me not contacting the living reef	Injunctive belief
Guides would disapprove of me not contacting the living reef	Injunctive belief
Guides are most likely not to contact the reef	Descriptive belief
Deeper water would make it easier not to contact the living reef	Control belief
More information would make it easier not to contact the living reef	Control belief

This workshop had in attendance boat captains, guides, salesmen and boat owners. Most of the interpretive materials prepared for the workshop were designed for use by snorkel guides. The best method of interpretation has often been attributed to guides as they deliver a very personal interpretation (Skanavis and Giannoulis, 2009, Moscardo et al., 2004, Luck, 2003). Guides tend to act as motivators in getting visitors to respect wildlife or adopt pro-environmental practices (Skanavis and Giannoulis, 2009, Zeppel, 2008, Zeppel and Muloin, 2008). Furthermore, attributes such as the ability to demonstrate role-model behaviour, manage visitor-wildlife interactions and enforce minimal impact behaviour make guides properly and best placed to deliver interpretation (Skanavis and Giannoulis, 2009, Moscardo et al., 2004, Littlefair, 2003).

Once the teachings of the training workshop had been implemented within the snorkel industry the researcher accompanied snorkel excursions and documented if the snorkel boat had brought the interpretive materials (flip chart, underwater slate and flag) from the workshop, and if the materials (flip chart and underwater slate) were

used throughout the snorkel excursion. Snorkel boats that departed the shore without the researcher onboard were also monitored to see if the materials were brought onboard and if the materials were used throughout the excursion. Due to the absence of the researcher onboard it was not always possible to determine if the materials were present on the boat and if they were used. Occasional interaction of the researcher with the clients and crew of those boats did provide information about the presence of the materials and the use of the materials during the snorkel excursion.

Sample Size

The interpretive training workshop, termed ‘The Sea Through the Looking Glass’, was able to train 143 participants involved in snorkelling excursions in the Mombasa Marine Park and Reserve, spread throughout three individual workshops. Eleven of these participants were employees of the Kenya Wildlife Service (KWS), the remaining participants consisted of guides, captains, salesmen or boat owners. At the time of the workshop 30 snorkel boats were active in the park and all but four of these boats sent delegates to the training workshop. One KWS employee who attended the first training workshop assisted with the remaining two workshops to become a trainer for any future workshops. The dates of the three training workshops were June 2011 (2 sessions) and May 2012. After implementation of the training workshop the researcher was present on 34 different snorkel excursions.

Workshop Materials

Flipchart - The flipchart consisted of an A3-sized, 20-sided presentation. This flip chart covered information on the Mombasa Marine Park, sea grass beds, coral reefs, common life to be encountered during the excursion, pro-environmental techniques,

snorkel techniques, snorkel briefing and the guided reef walk. A reference booklet was also designed to accompany the flip chart.

Underwater slate - The underwater slate was created for use during any in-water activities. The underwater slate depicted photos of the fish, invertebrate and coral species seen in the marine park. Fish were categorized according to size and family.

Salesman booklet - the salesman booklet was created to allow the salesman to conduct sales in a professional manner.

Flags - A flag was designed for use on the individual boats to differentiate them from the snorkel boats that chose not to attend the workshop, and therefore not able to deliver the new valued product (the interpretation).

Participant manuals - Every participant received a participant manual. The participant manual contained every presentation delivered during the workshop as well as additional information on marine life.

Branded Polo shirts - Polo shirts, with logo, were designed to act as a uniform that could be worn when conducting snorkel excursion business.

Signboards - Signboards were placed at strategic locations throughout the park (KWS ticket booths, boat departure areas, areas that attract clients). These signboards depicted the logo of the 'new product' on one side and explained what the logo entails (training in responsible tourism, marine conservation, professionalism). The other side portrayed the code of conduct, as developed by the participants of the workshop.

The workshop created a branding theme that the snorkel operators could use to develop their businesses. Each participant (and boat) that successfully completed the training workshop and, implemented the teachings of the workshop, received a logo (See Appendix 3). This logo is a brand that distinguishes the boat operator from those

operators who did not complete the training workshop. This logo and its explanation were advertised on signage boards spread out along the coastline of the Mombasa Marine Park and Reserve. All materials were also branded with this logo. Any future clientele will thus be able to distinguish ‘eco’ operators from ‘non-eco’ operators and be able to identify what these branded operations offer.

Three months after the first two interpretive training workshops a competition called ‘The Challenge’ was initiated in an effort to assist the snorkel operations in using the materials distributed to the snorkel operations upon completion of the workshop. The competition used mini questionnaires (see Appendix 4) to gather information from clients of the snorkelling excursions regarding the overall excursion. Questionnaires were available in English, French, German and Kiswahili, representing the four most common languages of the clients in the Mombasa Marine Park and Reserve. Seven key questions were presented that were scored on a scale of 1-10 (bad-good) and three questions existed to determine if the crew used the materials of the workshop. These questionnaires were completed by clients upon completion of a snorkelling excursion. This competition lasted three months after which the best scoring boats and crew were awarded prizes donated by the Kenya Wildlife Service.

Results and Discussion

Overall Effect of the Training Workshop

As a result of the interpretive workshop the behaviour of the guides and their snorkelling clients was influenced into more environmental-friendly behaviour (den Haring, 2014). Differences were evident between snorkelers who did not receive interpretation and those who did. The evaluation of the differences between the

snorkelling clients before and after the implementation of the teachings of the training workshop was based on monitoring the behaviour of snorkelers during in-water observations, and through the use of post-excursion questionnaires (visitor experience)(den Haring 2014). This study found that the clients and guides on these excursions exhibited fewer contacts after the implementation of the interpretive efforts. The contacts made by the clients after the interpretive efforts were implemented included more intentional contacts on dead substrate (compared to before the implementation of the interpretive efforts) and more positive contacts throughout the snorkel excursion. Other observable differences as a result of the interpretive workshop include: guides explaining to other guides (who did not attend the workshop) to replace marine organisms (i.e. starfish, sea cucumbers, sea urchins) back into the water, guides instructing their clients verbally not to stand on the coral while they snorkel, guides pointing out fish during the snorkel excursion and guides collecting rubbish during the snorkel excursion (pers obs den Haring).

Visitor experience was also enhanced as a result of the implementation of the teachings of the training workshop (den Haring 2014). More snorkelling clients stated they received a presentation during their snorkel excursion after the implementation of the training workshop and clients were more satisfied with the amount of interaction, use of illustrations and wording of the presentations and/or guided activities after the training workshop. Furthermore, clients on excursions following the implementation of the interpretive efforts stated that the knowledge of their guide added to their enjoyment during the excursion (significantly more after the training workshop compared to before). This last difference between the before- and after-workshop groups could also explain the increased amount of elaboration, or critical

thinking, by clients after the workshop of the messages communicated to them via the guide, or presentation, throughout their snorkelling excursion.

One of the main outputs that the training workshop produced was a Code of Conduct for the snorkel excursions and the associated members. The creation of this Code of Conduct was preceded by presentations on Environmental Impacts, Pro-environmental techniques and Code of Conducts. As a group discussion with all participants, the skeleton of a Code of Conduct was created. Throughout the remainder of the workshop smaller discussion groups (each group had 6-10 participants) were asked to review and amend the proposed first draft of the code of conduct. This process created a code of conduct that had undergone several drafts by the end of the workshop. The finalized code of conduct is shown in Appendix 5.

Use of Training Workshop Materials

The researcher was present on 34 different excursions and observed the use of workshop materials. The flipchart was only brought on board on 53% of the 34 excursions and used on 41% of those trips. The underwater slate was present on 50% of those excursions and utilized in 32% of those excursions. The flag with the logo was observed to be present on 71% of the excursions the researcher accompanied.

The researcher was able to monitor 492 boats depart for snorkelling excursions. Of these departures it was not always possible to determine if the workshop materials were present on the boat, or if the materials were used. The flipchart was only brought on board on 7% of the 492 excursions monitored and it was used on 3% of those trips (for 87% and 89% of the excursions monitored it was not possible to determine if the

materials were on board, or if the materials were used respectively). The underwater slate was present on 8% of those excursions and used in 4% of those excursions (for 85% and 88% of the excursions monitored it was not possible to determine if the underwater slate was on board, or if it was used respectively). The flag was observed to be present on 45% of the excursions the researcher monitored (for 38% of the excursions monitored it was not possible to determine if the flag was displayed).

When the unknown data from the excursions only monitored by the researcher was removed, it showed that the snorkel excursions brought the flipchart and underwater slate on board 54% and 55% of the time respectively. Both the flipchart and the underwater slate were used 30% of the time during those excursions.

The most accurate method of measuring use of materials was when the researcher was present throughout the entire excursion. Yet this method revealed the lowest scores of material use. This method yielded the smallest sample size of excursions monitored. The next most accurate method was monitoring of excursions by the researcher. The researcher was not directly present on these excursions but gathered information regarding material use by observing presence/absence of the materials on the boat and by speaking to clients on those excursions. Material use was slightly higher using this method however these results might not be completely valid. Materials may have been stored out of visual sight from the researcher and clients may not have completely understood what the researcher meant by 'presentation'. Clients could have stated that they received a presentation that did not include the use of the flipchart or underwater slate. The least accurate method of gathering information on the use of the materials was through the use of the questionnaires collected during

‘The Challenge’. Clients completed these questionnaires in the absence of the researcher. The crew of the snorkel excursions could have influenced the responses of the clients to provide a higher appearance of their excursion. The latter could have been possible as several boats the researcher accompanied on snorkel excursion consistently never brought the materials with them on excursions, yet questionnaires retrieved from these boats indicated that these boats always used the materials. Based on these discrepancies, this method is considered to be the least accurate and therefore not used to determine material use. However, regardless of which of the two remaining methods is used to gauge material use, either method shows that the materials were only used a small fraction of the time.

Even with occasional use of the materials, behaviour change was still present. The salient beliefs that snorkelers hold in the Mombasa Marine Park and Reserve about not contacting the reef when snorkelling were not only targeted in the materials. These beliefs were also targeted throughout the expert presentations and group discussions of the interpretive workshop. The changed behaviour of the guides (den Haring 2014), paired with the personal observations of the researcher, revealed that the overall behaviour of the guides also played a role in influencing the resultant behaviour of snorkelling clients. Effective interpretation is not restricted to providing information, but also includes explaining problems, providing solutions and guiding visitors while they engage in snorkelling activities (Mayes and Richins, 2008, Zeppel, 2008, Moscardo et al., 2004, Luck, 2003). The guides appear to have delivered successful interpretation that ultimately led to behaviour change. This behaviour change might have been amplified had more use been made of the materials.

'The Challenge'

The lack of material use was already apparent three months after the completion of the second training workshop. 'The Challenge' competition was created to combat this obstacle and assist snorkel operators in material use. This competition yielded 404 completed questionnaires from 85 different excursions. The results of 'The Challenge' are shown in Table 2. The highest scoring factors were the appearance of the crew, the knowledge of the crew, and the professionalism of the crew (9.3). Overall the excursion was rated 9.3 out of 10. The quality of the snorkelling excursion received the lowest score (8.9). The clients on the excursions during the competition indicated that the flipchart was used on 75% of the excursions, the underwater slate was used on 76% of the excursions and the salesman folder was used to sell 61% of the excursions. The researcher was present on two of these excursions and was able to validate the use of the materials as described in the responses of questionnaires of those excursions. In both cases the responses accurately described the use of the materials. The remaining 83 excursions cannot be validated for accuracy.

Table 2. The average scores to the questions of the mini questionnaire of 'The Challenge' (n=404).

Question	Average Score
Appearance of the crew	9.3
Quality of snorkelling equipment	8.9
The manner in which the salesman sold the trip	9.1
The knowledge of the crew about marine life	9.3
Professionalism of the crew	9.3
Value for money for today's excursion	9.0
Rate the trip overall	9.3

This competition succeeded in rejuvenating the material use and eliciting enthusiasm amongst the snorkel operators. The competition also served as a tool the operators used to inform their clients of the training they undertook and got them (the clients) more actively involved in learning about the snorkel industry in the park.

Limitations

There did exist some limitations that should be addressed in any future or comparable training. A lack of guidance by the workshop trainers following the workshop may have contributed to the infrequent use of the materials. Fortnightly or monthly feedback sessions should have been introduced as an opportunity for some of the snorkel operators and/or crew to come together and discuss challenges, obstacles, issues and successes of implementing the teachings of the workshop. Furthermore, the various tour operators active in hotels along the Mombasa coastline should have been involved so that they were aware of the transformed snorkel excursions resulting in these tour operators recommending these snorkel excursions to their clients.

Conclusion

Previous research has shown interpretive training to create pro-environmental behaviour change in guides and their clients (den Haring 2014, Zeppel 2008, Moscardo et al., 2004). The effects of this behaviour change could have been magnified had more use been made of the workshop materials. The workshop materials incorporated the salient beliefs of snorkelers into the messages they conveyed to snorkelers, and by targeting these messages behaviour change is expected (Ham, 2007, Ballantyne and Packer, 2005). Results of this paper indicate that the materials were not used as much as they could have been. Three different

methods were used to determine how often various materials were used (specifically the flipchart and the underwater slate) and each method had different results paired with differing amounts of accuracy.

Acknowledgements

This research project is grateful to all the snorkel operators that have allowed the researcher to accompany their clients on the snorkel excursions. Thanks are also due to the Kenya Wildlife Service for logistical support in realizing this project. Funding of this training workshop was made available by Project AWARE, The British Ecological Society, The Netherlands Embassy in Nairobi, James Cook University, Heritage Hotels Ltd, CORDIO East Africa, GreenWater and Fresha Events.

Reference List

- BALLANTYNE, R. & PACKER, J. 2005. Promoting environmentally sustainable attitudes and behaviour through free-choice learning experiences: what is the state of the game? *Environmental Education Research*, 11, 281-295.
- DARNTON, A. 2008. Behaviour change knowledge review. *Government Social Research Unit*.
- DEN HARING, S. D. 2014. *Effective Interpretation for Recreational Marine Resource Use in the Mombasa Marine Park and Reserve, Kenya*. PhD, James Cook University.
- FORESTELL, P. 1993. If Leviathan has a face, does Gaia have a soul?: Incorporating environmental education in marine eco-tourism programs. *Ocean & Coastal Management*, 20, 267-282.
- HAM, S. Can interpretation really make a difference? Answers to four questions from cognitive and behavioral psychology. Interpreting World Heritage Conference, 2007 Vancouver, Canada. 25-29.
- HAMMITT, W. 1984. Cognitive processes involved in environmental interpretation. *Journal of Environmental Education*, 15, 11-15.
- HAMMITT, W. & COLE, D. 1987. *Wildland recreation*, Wiley.
- HUNGERFORD, H. & VOLK, T. 1990. Changing learner behavior through environmental education. *Journal of Environmental Education*, 21, 8-21.
- LEUNG, Y. & MARION, J. 2000. Recreation impacts and management in wilderness: A state-of-knowledge review. *Proceedings: Wilderness science in a time of change*, 5, 23-27.
- LITTLEFAIR, C. J. 2003. *The effectiveness of interpretation in reducing the impacts of visitors in national parks*. Griffith University.

- LUCK, M. 2003. Education on marine mammal tours as agent for conservation—do tourists want to be educated? *Ocean & Coastal Management*, 46, 943-956.
- MADIN, E. & FENTON, D. 2004. Environmental interpretation in the Great Barrier Reef Marine Park: an assessment of programme effectiveness. *Journal of Sustainable Tourism*, 12, 121-137.
- MARION, J. & REID, S. 2007. Minimising visitor impacts to protected areas: The efficacy of low impact education programmes. *Journal of Sustainable Tourism*, 15, 5-27.
- MAYES, G. & RICHINS, H. 2008. Dolphin Watch Tourism: Two Differing Examples of Sustainable Practices and Proenvironmental Outcomes. *Tourism in Marine Environments*, 5, 2, 201-214.
- MOSCARDO, G. 1996. Mindful visitors heritage and tourism. *Annals of tourism research*, 23, 376-397.
- MOSCARDO, G. 1998. Interpretation and sustainable tourism: Functions, examples and principles. *Journal of Tourism Studies*, 9, 2-13.
- MOSCARDO, G. & PEARCE, P. 1986. Visitor centres and environmental interpretation: An exploration of the relationships among visitor enjoyment, understanding and mindfulness. *Journal of environmental psychology*, 6, 89-108.
- MOSCARDO, G., WOODS, B. & SALTZER, R. 2004. The role of interpretation in wildlife tourism. Chapter 12. In: HIGGINBOTTOM, K. (ed.) *Wildlife Tourism: Impacts, Planning and Management*. Altona: Common Ground Publishing.
- ORAMS, M. 1994. Creating effective interpretation for managing interaction between tourists and wildlife. *Australian Journal of Environmental Education*, 10, 21-34.
- ORAMS, M. 1996. Using interpretation to manage nature-based tourism. *Journal of Sustainable Tourism*, 4, 81-94.
- ORAMS, M. 1997. The effectiveness of environmental education: can we turn tourists into 'greenies'? *Progress in Tourism and Hospitality Research*, 3, 295-306.
- ORAMS, M. B. 2000. Tourists getting close to whales, is it what whale-watching is all about? *Tourism management*, 21, 561-569.
- POMEROY, R., PARKS, J. & WATSON, L. 2004. *How is Your MPA Doing?: A Guidebook of Natural and Social Indicators for Evaluating Marine Protected Area Management Effectiveness*, World Conservation Union.
- SKANAVIS, C. & GIANNOULIS, C. 2009. A training model for environmental educators and interpreters employed in Greek protected areas and ecotourism settings. *International Journal of Sustainable Development & World Ecology*, 16, 164-176.
- STERN, P. 2005. Understanding individuals' environmentally significant behavior. *Environmental Law Reporter News and Analysis*, 35, 10785.
- TILDEN, F. & CRAIG, R. 1977. *Interpreting our heritage*, University of North Carolina Press Chapel Hill.
- WEILER, B. & DAVIS, D. 1993. An exploratory investigation into the roles of the nature-based tour leader. *Tourism management*, 14, 91-91.
- ZEPPEL, H. 2008. Education and Conservation Benefits of Marine Wildlife Tours: Developing Free-Choice Learning Experiences. *The Journal of Environmental Education*, 39, 3-18.

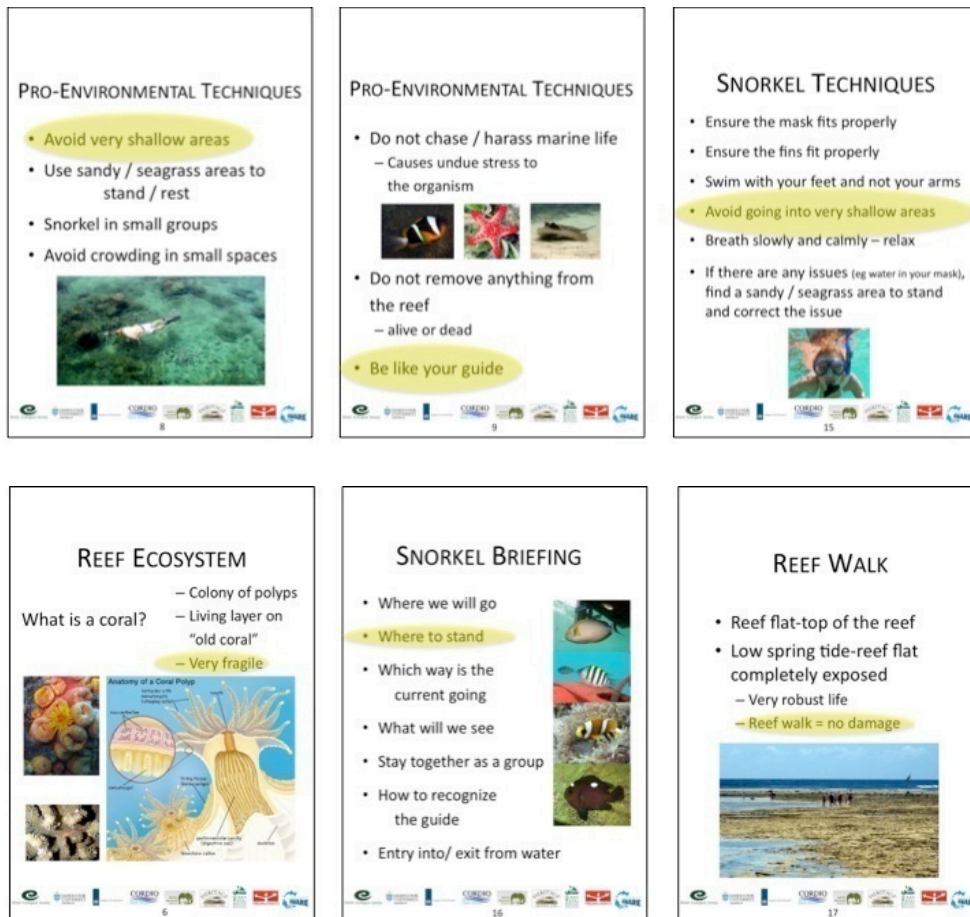
ZEPPEL, H. & MULOIN, S. 2008. Conservation and education benefits of interpretation on Marine Wildlife Tours. *Tourism in Marine Environments*, 5, 2, 215-227.

Appendix

1. The training workshop program outline.

Expert Presentations	Facilitated Group Discussions	Role Play Scenarios
Introduction of Training Workshop-1.5 hrs	Discussion of Environmental Impacts-1.5 hrs	Practice session using the flip chart on dry land-2 hrs
Lagoon Ecosystem-1.5 hrs	Pro-environmental techniques-1.5 hours	Feedback session for flip chart use on dry land-0.5 hr
Reef Ecosystem (including reef walk)-2 hrs	Development of Code of Conduct -2.5 hrs	Practice session using the salesman booklet-1 hr
Mombasa Marine Park and Reserve-1 hr	Threats and Conservation in the Mombasa Marine Park-1 hr	Feedback session for salesman booklet use-0.5 hr
Hospitality, Sales and Marketing-1 hr	Introduction of Training Workshop-1.5 hrs	Practice session on the boat: flip chart use, boat driving techniques and client interaction-3 hrs
Introduction of Materials: Flip Chart, Slates, Salesman Booklet-1.5 hrs		Feedback session for boat trip-0.5 hr
Snorkel Guiding and Techniques-1.5 hrs		
Closing ceremony and certification presentation-0.5 hr		



2. Salient beliefs were targeted in the workshop presentations, group discussions and materials. The images in this figure are from the flip chart that snorkel guides present to their snorkelling clients. Sides 8 and 15 of the flip chart target the belief that deeper water (avoiding shallow water) makes it easier not to contact the reef substrate. Side 9 informs the snorkelers that they should be like their guide. This likeness addresses the fact that the clients believe the guide is the one who approves of them not contacting the reef and that they believe the guide is also the one most likely to not contact the reef. The final three sides (6, 16 and 17) explain that coral reefs are fragile and easily damaged. These messages explain where to stand and that certain activities do not damage the coral reef.




3. The logo of the interpretive workshop. Every participant and boat that successfully completed the training workshop was given this logo to use in their business.



4. The mini questionnaire used in 'The Challenge'.

	kws ticket office: _____ number: _____		
	THE CHALLENGE		
Date of excursion: _____	Name of Glass Boat: _____		
# of persons in your group: _____	Name of Crew: _____		
Please circle the score for the following:			
	BAD		GOOD
1. Appearance of the crew	1	2 3 4 5 6 7 8 9 10	
2. Quality of snorkeling equipment	1	2 3 4 5 6 7 8 9 10	
3. The manner in which the salesman sold the trip	1	2 3 4 5 6 7 8 9 10	
4. The knowledge of the crew about marine life	1	2 3 4 5 6 7 8 9 10	
5. Professionalism of the crew	1	2 3 4 5 6 7 8 9 10	
6. Value for money for today's excursion	1	2 3 4 5 6 7 8 9 10	
7. Rate the trip overall	1	2 3 4 5 6 7 8 9 10	
Did you receive a flipchart presentation on your excursion today?	YES / NO		
Did the crew use the underwater fish ID slates?	YES / NO		
Did the salesman use a salesman folder to sell the excursion?	YES / NO		

5. The finalized code of conduct as decided by the snorkel excursion associated members.



CODE OF CONDUCT
for
GLASS BOAT EXCURSIONS AND ASSOCIATED MEMBERS

- **All glass boat associated members will practice SAFETY FIRST**
 - They will display (and respect) the carrying capacity of each boat clearly for all clients to see
 - They will always remain with the clients for the duration of the excursion
 - They will moor (park) the boats in a safe manner at designated areas
 - They will carry safety equipment to include: first aid kit and life vests/rings

- **All glass boat associated members will RESPECT MARINE LIFE**
 - They will only look at the marine and not touch or remove anything from the reef (living or dead)
 - They will not harass any wildlife
 - They will not litter and will collect any rubbish

- **All glass boat associated members will conduct themselves in a PROFESSIONAL MANNER**
 - They will appear in a presentable manner and uniform
 - They will exercise social discipline and not engage in public debate
 - They will conduct business in a honest, realistic and clear manner
 - They will not interrupt/intrude another member conducting sales (one man, one client)
 - They will not harass (potential) clients
 - They will be punctual
 - They will be affiliated to a glass boat association (example MBOA) and attend the meetings

- **All glass boat associated members agree NOT TO TRANSFER OR LEND OUT any of the educational materials received upon completion of the workshop**

