

Public impressions of the shark management in False Bay

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Introduction

Fish Hoek Beach is considered one of the most popular beaches in Cape Town, but unfortunately this beach and others on the False Bay coast have a growing reputation for shark attacks. In recent years, there has been an increase in the interaction between beach users and sharks, and although the number of fatal attacks is still relatively low, the public fear of them has increased (Nel *et al.*, 2006).

In 2004, the City of Cape Town launched the Shark Spotters Program (Fig.1) in an attempt to protect the public from shark attacks in an environmentally friendly manner (Oelofse and Kamp, 2006). This program is widely considered to have been a great success (Kock *et al.*, 2012). In March 2013 the City of Cape Town in conjunction with Shark Spotters introduced a shark exclusion net on a trial basis to further increase the protection afforded to swimmers (Fig. 2). By mid 2014 an evaluation of the trial phase was underway to study both the ecological impact of the project as well as public perceptions of it.

This study reports on the public perceptions of shark management and specifically the exclusion net.

Whether one is in favour of or against the introduction of a permanent exclusion net probably depends on one's relative fears of a shark attack on the one hand and one's assessment of the potential risk of marine life being entangled in the net. The impact of the net on the livelihoods of treknet fishers might also influence opinions. Entanglement is a big issue for nature lovers because the type of net in operation on the coast of KwaZulu-Natal routinely entangle and kill marine life in large numbers.

Community Partner



Figure 1: Spotter on duty at Koeel Bay (Photo: Sean Geer)



Figure 2: Safe swimming inside the net at Fish Hoek

Shark Spotters is a registered NPO and facilitates a pioneering shark safety strategy that improves the safety of waters users, while conserving a threatened species. Spotters scan coastal waters for sharks from elevated positions at five Cape Town beaches, seven days a week, 365 days a year. The service also operates seasonally at three other beaches. A protocol using four informational flags and a shark siren to warn water users of the nearby presence of sharks (Fig. 3). Upon hearing the warning, water users are encouraged to get out of the water and wait until the Spotter gives the "all clear" before going back in.

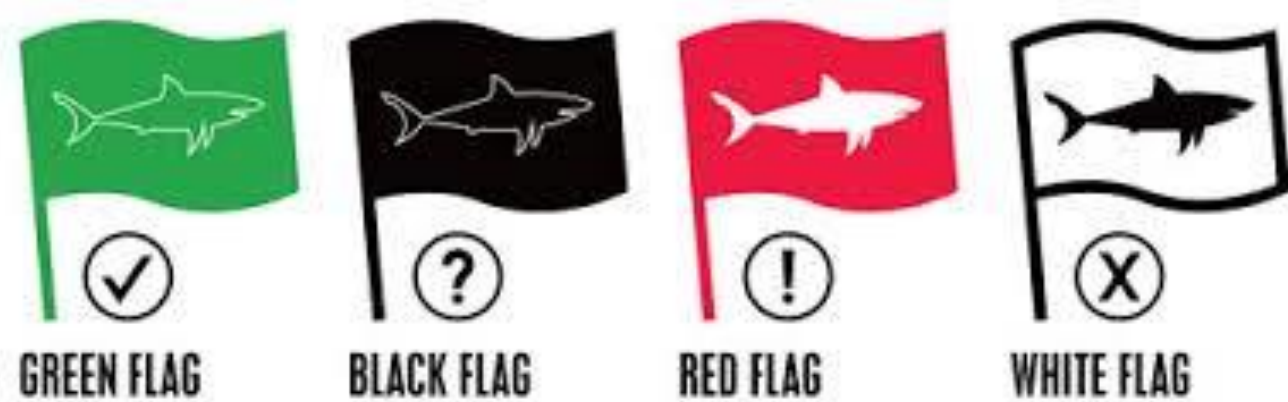


Figure 3: Shark Spotters' flag system for beach safety

Methods

This was a collaborative project facilitated by the UCT Knowledge Co-op. Students of the course in Resource Economics worked alongside the Shark Spotters' team under academic supervision to produce a research paper for their degree that also answered an important question for the Shark Spotters. <http://www.knowledgeco-op.uct.ac.za/>

A battery of 11 survey questions was designed and piloted to probe public attitudes relating to shark management and perceived risk of shark attacks in False Bay. The survey was conducted on Fish Hoek beach on two occasions. On the first day, a public holiday, the beach was relatively full and 50 questionnaires were completed. On the second day the weather was not as good and despite it being a school holiday only 21 questionnaires were completed.

We collected data on people's perceptions of the risk of a shark attack, their satisfaction with the Shark Spotters programme, whether they want the net to continue and where they got their information from. Possible determinants of the attitude to shark management include demographics (gender, age, suburb, whether the respondent has children, etc.), the respondent's main source of information regarding shark management and perceptions of the impact of the net on treknet fishers and marine life. Clearly satisfaction with shark management is also related to a person's perception of the likelihood of a shark attack, although the causality could run in both directions.

Results

We found that despite a real fear of shark attacks (Fig. 4), 65% of beach users at Fish Hoek consider the exclusion net to be an optimal solution. More than half of people are happy with the risk of shark attacks are being managed. Most people are unwilling to consider lethal control and the majority are willing to impact on the livelihoods of treknet fishers if doing so would improve beach safety. Entanglement was not a issue for most people, possibly because they were aware that the net's design minimizes entanglement risk.

Table 1: Possible explanations of attitudes to shark management

	Satisfied (n=42)	Unsatisfied (n=14)	Unsure (n=15)	ANOVA F
• $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.001$				
Relies on local media for information about shark management	36%	57%	20%	2.21*
Satisfied with the information provided	83%	14%	60%	4.88**
Concerned about entanglement	64%	36%	67%	2.03*
Willing to cull sharks	5%	21%	13%	1.78*
Willing to impose cost on treknet fishers to improve safety	81%	64%	87%	1.21
Lives in Fish Hoek	64%	100%	40%	6.79***
Male	50%	57%	27%	1.61*
Perceived risk of a shark attack (10pt Likert scale)	6.2	6.2	7.3	0.91

The main difference between people who are happy with the program and those who are not, is where they live and get their information. People who are unhappy with the Shark Spotters program are more likely to live locally (Fish Hoek), are more likely to use local media as their main source of information and are less likely to feel that Shark Spotters communicates effectively about the exclusion net and its impacts than people who indicated that they are happy with the program (Table 1). We noticed a small gender effect, with women being less willing to express a view about the efficacy of local shark management and were surprised to find that views on shark management were essentially unaffected by the perceived risk of an attack.

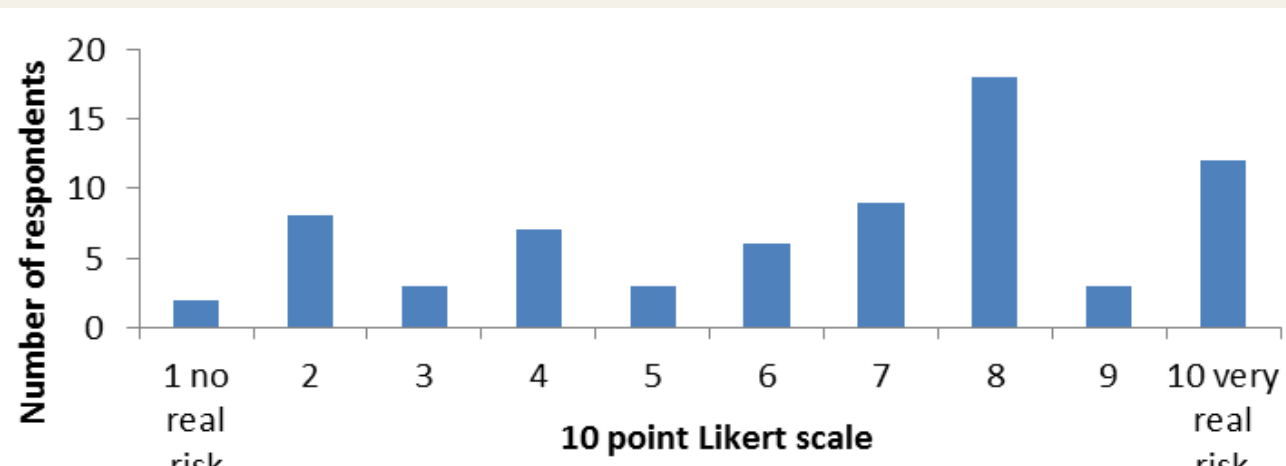


Figure 4: Perceived likelihood of a shark attack in False Bay



Figure 5: White shark off Seal Island (Photo: Morne Hardenberg)

Conclusion

The public is generally fearful of shark attacks in False Bay, but are less concerned about the entanglement of marine life in the exclusion net and the impact of the net on treknet fishers operating in the bay than they were expected to be. This survey uncovered that the vocal opposition to the Shark Spotter program and its exclusion net is restricted to a local minority who are generally calling for better information, especially in the local media.

Compared to the average citizen this group is more willing to cull sharks, less concerned about entanglement and less willing to impose costs on treknet fishers, but assess the risk of a shark attack about the same as the general public. Shark Spotters will need a further in depth study of this group in order to best respond to their concerns.

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Acknowledgements

We would like to acknowledge the generous assistance of Barbara Schmid of the Knowledge Co-op. The Department of Environmental Affairs and Department of Agriculture, Forestry and Fisheries are thanked for providing the research permit (RES2012/94, RES2014/02). The SAWDN provided disentanglement training, the Council for Scientific and Industrial Research co-funded research equipment and the Fish Hoek Surf Lifesaving Club are thanked for their ongoing support. The City of Cape Town and Save Our Seas Foundation are primary sponsors of the Shark Spotters program.