



SHARK SPOTTERS
SAFETY EDUCATION RESEARCH CONSERVATION

AUSTRALIA VISIT MARCH 2016

SITE ASSESSMENTS & SAFETY RECOMMENDATIONS

Compiled by Sarah Waries

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1. INTRODUCTION

Shark Spotters were invited by Sea Shepherd Australia and No Shark Cull Inc to travel to three states in Australia in order to share information about shark attack mitigation and assess if any beaches would be suitable for the implementation of a spotting programme.

Between 7 and 22 March 2016, two representatives from Shark Spotters visited a number of locations along the Western Australian, Queensland and New South Wales coastline to conduct site assessments, as well as engage in meetings with key local stakeholders and state government officials, present to over 200 community members at public forum events and conduct numerous radio, tv and print media interviews.

This report provides a brief overview of the outcomes of the visit, and recommendations for further ways to improve shark safety.

2. BACKGROUND

Shark Spotters vision is the sustainable co-existence of people and sharks.

Started in 2004 in response to a spate of shark bite incidents and increased shark sightings, Shark Spotters is now the primary shark safety strategy used in Cape Town. Shark Spotters improves beach safety by applying innovative and responsible shark safety solutions that reduce the spatial overlap between people and sharks, thereby reducing the risk of a shark bite. We also provide emergency response in the event of a shark incident as well as conduct cutting-edge applied research on shark behaviour and ecology, raise awareness about shark safety and conservation issues, and provide employment opportunities and skills development for shark spotters.

Our organisation is at the forefront of sustainable shark safety solutions world-wide, operating two unique safety programs; the shark spotters, an early warning system that alerts water users to the presence of potentially dangerous sharks in the area at eight of Cape Town's most popular beaches, and an award winning shark exclusion net, that acts as a barrier that prevents sharks from entering an exclusion zone at Fish Hoek. Our applied research program has carried out ground-breaking studies on white shark behavior and ecology, contributing significantly to global knowledge around this threatened apex predator (e.g. Kock et al. 2012, 2013, Kock 2014, Weltz et al. 2013).

Through our unique combination of shark safety services, applied research and public education, we have developed proven effective strategies to assess and minimize shark risk in the areas we operate.

3. SITE ASSESSMENTS

Shark bite mitigation is very site specific, with each individual beach needing to be assessed according to a range of criteria including but not limited to:

- Elevation
- Water clarity
- Sea floor substrate
- Water depth
- Angle to rising and setting sun
- Angle to waves
- Water user activity

A total of 52 sites were inspected to assess their suitability for shark spotting. In Western Australia these sites were focused in South-West WA, where the spike in shark bite incidents in 2013-2014 was recorded, as well as some sites at popular beaches in Perth. In Queensland sites were assessed on the Gold Coast, a popular tourist destination where both shark nets and drum lines are currently in place. In New South Wales sites assessments were focused in the Ballina and Byron Bay areas, which experienced a spike in shark bite incidents in 2014/2015, as well as some beaches around the Sydney area.

a) WESTERN AUSTRALIA

BEACH/SURF BREAK	DETAILS	SPOTTING POTENTIAL
CASTLE BAY	Pocket beach approx. 700m across between two headlands. Elevation at headlands approx. 30m. Gently sloping sandy sea floor with reef area around the edges. Mostly bathers and snorkelers, although surfing occurs at Castle Rock under the right conditions.	GOOD Lookout point either on headland or hill in middle of beach. Additional elevation from tower would be advantageous
MEELUP	Pocket beach approx. 1km across with two short headlands. Gently sloping sea floor for +/-200m before deeper drop off. Mostly bathers although surfers use area in winter	GOOD Lookout point on hill above road
BUNKER BAY	Sandy sea floor with reef patches but deep/darker areas close to shore. No good elevation near car park/swimmers area	POOR Due to insufficient elevation

FARM BREAK	Sandy floor with reef patches. Surfing break approx. 50m from shore. Insufficient elevation	POOR Possibly elevation at the resort overlooking the break
BONEYARDS	Sandy/Reef. Insufficient elevation.	POOR
THREE BEARS	Approx 30m elevation. Very popular surf spot over shallow reef in very remote area. Dark reef sea floor makes spotting impossible	POOR
YALLINGUP MAIN BREAK	Deep sea floor over reef area so very dark. Surfers far from shore. No elevation	POOR
RABBITS	Approx 40m elevation. Sand and reef sea floor	POOR
SHALLOWS	Over 40m elevation. Reef close to shore.	POOR
SMITHS BEACH	Popular swimming and surfing area. Small reefs surrounded by large sand areas. Popular salmon fishing area. Elevation on hill	GOOD Spotter to be positioned in front of surfing break
NORTH POINT	Elevation approx. 50m. Very dark reef sea floor.	POOR
SOUTH POINT	Good elevation more than 50m, dark reef sea floor	POOR
HUSSARS	Surfing spot close to shore. Very dark reef sea floor	POOR
LEFTIES	Aprox 44m elevation. Deep water and rocky sea floor	POOR
BIG ROCK	Clear water, medium elevation. Rocky sea floor	POOR
UMBIES	Clear water, medium elevation. Rocky sea floor	POOR
ELLENSBROOK	Clear water, medium elevation. Rocky sea floor	POOR
REDGATE	Sandy sea floor close to shore with reef behind. Elevation possible better on far side of the beach. Clear water	MEDIUM Will need further investigation from different elevated points
SURFERS POINT	Good elevation but surfers +/- 200m offshore over dark rocky reef	POOR

MARGARETS RIVER MOUTH	Sandy sea floor in river mouth with shallow reef approx. 200m offshore. Insufficient elevation from sand dune at present	MEDIUM Will require additional elevation and investigation in different weather conditions due to river mouth
GNARABUP	Mixed reef and sand, not possible to see far offshore. Elevation approx. 20m. Very popular bathing beach.	POOR
TRIGG BEACH	Gently sloping sandy sea floor. Insufficient elevation	POOR
COOGEE BEACH	Gently sloping sandy sea floor. No elevation. Site of eco shark barrier	POOR
LEIGHTON BEACH	Sandy sea floor. Insufficient elevation.	POOR

b) QUEENSLAND

BEACH/SURF BREAK	DETAILS	SPOTTING POTENTIAL
MIAMI BEACH	Dark water, elevation not in right place as water users are too far spread out. Facing oncoming waves	POOR
NORTH BURLEY	Dark water. Insufficient elevation (maybe from high rise?). Facing oncoming waves.	POOR
BURLEY HEADS	Lots of surfers in the corner. Parallel to waves, looking back on surfers – good. Elevation – high point on cliff further back but corner obstructed by trees	POOR View obstructed by trees
ELEPHANT ROCK AT CORRUMBIN	Only 9m elevation. Water users close to spotting site.	POOR may show better potential if more elevation can be achieved
KIRRA	Elevation 17m. Water looks nice and gently sloping. Surfers sitting at edge of dark water as well as closer to shore.	MEDIUM additional elevation would be necessary
SNAPPER ROCKS (COMPETITION AREA)	Good elevation but rocky sea floor and deep water makes area not suitable	POOR

SNAPPER ROCKS (TOWARDS THE BEACH AREA)	Sandy sea floor. Good elevation from high rise buildings. Water clear.	GOOD would need to be from high rise buildings
POINT DANGER	Contained by groyne, surfers in area where water is not too dark. Elevation good – approx 70m. Popular surfing across whole length of area – approx. 400m	GOOD

c) NEW SOUTH WALES

BEACH/SURF BREAK	DETAILS	SPOTTING POTENTIAL
BELONGIL	No elevation. Long sloping sandy beach. Clear water	POOR insufficient elevation
BYRON BAY MAIN BEACH	No elevation. Mixed use surfing and swimming. Gently sloping sandy beach, clear water	POOR insufficient elevation
CLARKES BEACH	Same as above	POOR insufficient elevation
THE PASS	Clear water, sandy bottom, surfers within 200m of shore. View obstructed by trees	GOOD would need structure on hillside in front of trees
WATEGOS	Wide bay with elevation either side. Sandy sea floor. Surfers spread across the bay	GOOD recommend spotter on either headland
LITTLE WATEGOS	Good elevation, clear water although some areas deep close to shore. Perhaps not a regularly used area.	MEDIUM depending on depth and number of water users
COSY CORNER	Good elevation from headland (out past car park) towards lighthouse. No water users at time of assessment (adverse weather)	MEDIUM depending on where water users are located
TALLOW BEACH	Long white sandy beach. No elevation. Spotting only at Cosy Corner	POOR insufficient elevation
BROKEN HEAD	Sandy beach in corner. Surfers up to 200m from corner. Elevation further along jungle track	GOOD

LENNOX POINT	Elevation approx. 50m. Swell wraps around the point. Surfers +/-150m from shore in +/-2m depth. Morning glare an issue. Two surf areas, one at point, one closer to beach, would need two different spotting sites	GOOD elevation at the lookout for surfers at the point. elevation at hill with houses for surfers closer to the beach if necessary
BOULDERS BEACH	Elevation only 18m but surfers contained within 100m of corners. Sandy sea floor.	MEDIUM would need additional elevation of approx. 10m if possible
SHARPES BEACH	Long stretch of sandy beach with reef in the middle. Not much elevation	POOR
NORTH SHELLEY BEACH	Sandy sea floor with deep channel running through it. No elevation	POOR
LIGHTHOUSE BEACH	Location of new eco-shark barrier. Not enough elevation. Next to river mouth with dark brown water during rain.	POOR
EVANS HEAD	Good elevation, approximately 71m. Surfers located directly in river mouth in dark brown water	POOR
SANDON REEF	Rocky sea floor, water users too far offshore	POOR
WOONOONA BEACH	Insufficient elevation. Water users too far from shore	POOR
SOUTH MONA VALE	Good elevation, sandy sea floor. Water users too far from elevation	POOR
WARRIEWOOD	Good elevation, water users close to shore, clear water but gets deeper quickly	MEDIUM
QUEENSCLIFF BAY	Small bay with clear water and sandy sea floor. Popular with surfers only	MEDIUM
MANLY BEACH	Long stretch of white sandy beach. Water users too spread out over beach area and too far from elevation	POOR

It is not possible to categorically determine if shark spotting will work at a location after just one site visit, rather one is able to say that the site shows potential, and that further investigation needs to be carried out to confirm if it is a suitable spotting location.

We recommend that sites listed as either good or medium for spotting potential are subject to a feasibility assessment, where a trained observer spends a substantial period of time at a location (minimum 2 weeks) under varying environmental conditions to evaluate the site and identify the limitations and factors affecting spotting conditions specific to that area. The results of this assessment need to be objectively examined to determine if it is a suitable spotting location.

4. FURTHER RECOMMENDATIONS

Following our visit the Shark Spotters team identified a number of further actions that could be taken to improve shark safety and response to shark bite mitigation in Australia:

- Signage informing water users of shark risk before entering the water and simple tips on how to minimize the risk. Particularly relevant in those areas that have had a number of shark bites and/or numerous sightings previously.
- Signage noting the last shark sighting and/or factors indicating a possible increased likelihood of shark activity so that water users are aware of potential increased risk.
- Establishment of a shark sightings communication network in each region to record shark sightings and share with relevant authorities and the public.
- Partner with research organisations to better understand shark behavior and ecology in an area in order to inform public safety policy with current and accurate scientific information.
- Educating water users around factors affecting shark activity and the presence of sharks in an area so that people are able to understand the risk and make informed decisions when entering the water
- Introduction of shark attack first aid kits at beaches, especially at remote locations, to improve medical response in the event of a shark bite, thereby reducing fatalities.
- Public education around the importance of conserving sharks and the necessity of a non-lethal approach to shark attack mitigation.

5. DISCLAIMER

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