

Supporting document (by Della Grunwald) to the petition opposing the:
S.M.A.R.T Drumline Trial in Gracetown, Western Australia

Below is a summary of reasons for our opposition to the WA Fisheries S.M.A.R.T Drumline Trial¹ and requests to the WA Government. This information is an extended form of the online version of the petition which to date, has achieved almost 7500 signatures².

Why we are opposing S.M.A.R.T DRUMLINES (SDLs):

SDLs LACK EVIDENCE: There is no proof from similar operations worldwide that relocating sharks to another area is reducing the number of shark incidents overall. For instance, in Recife, Brazil, relocating sharks has been associated with an *increase* in attacks in adjacent areas indicating that the risk is simply being shifted³. The obvious implication of this result for WA, is that in an effort to protect all ocean users, large areas of the coastline would ultimately need to be drumlined at an enormous cost to the taxpayer. It should also be noted that the NSW trial has been underway for over 2 years and has not released any evidence that SDLs have increased safety for ocean users⁴. Furthermore, just recently an incident occurred at Ballina NSW where SDLs are installed⁵. We believe that SDLs will create a false sense of security *only*.

SDLs COULD INCREASE RISK: There is concern that attracting sharks with baits will *increase* risk to beach users. Many people have expressed that they would not be confident to swim at a beach where drumlines are installed. A case in point is that swimmers of the 2014 Rottneest Channel Swim demanded that baited drumlines be removed due to concerns that sharks would be attracted and pose a greater risk⁶. Or, if it were the case that SDLs were effective for beach users, these might not provide protection to divers using deeper waters where sharks are to be released. Finally, recent research from Curtin University has revealed that tagging can affect a shark's ability to feed suggesting an increased risk to humans⁷.

OUR OCEAN ENVIRONMENT IS UNDER THREAT: Sharks are critical for maintaining the health of our oceans⁸, and removing apex predators leads to detrimental cascading effects including a reduction in fish stocks⁹. It is a well known fact that shark populations worldwide have been decimated, and they continue to be threatened by fishing and shark control programs. In a recent report by Griffith University, it was estimated that shark numbers off the Queensland coast have reduced by 90% in the past 50 years¹⁰. If WA sharks (in particular the protected white shark) perish due to SDLs, this puts their numbers and our marine environment at further risk.

AUSTRALIANS DO NOT WANT LETHAL MEASURES: Most Australians do NOT support the use of lethal shark risk mitigation strategies, and SDLs are still highly invasive and hence potentially lethal. The "anti-lethal" sentiment is reflected in the numerous online polls that have been conducted in recent years, results from WA government's own research commissioned in 2012¹¹, the mammoth opposition to Premier Barnett's 2014 lethal drum line (DL) trial, and almost 7500 signatures on the online version of this petition. We expect that even if the trial operations are conducted properly, a number of sharks will still die, and this number will be much higher if operations are inadequate or guidelines are not adhered to. Already there are concerns that the operational procedures (as set out in the tender document) will risk the animal's welfare. It should be emphasised that while sharks might appear to be stable upon release, they can ultimately succumb to stress, hook or tag injuries over time. Research indicates that Grey Nurse sharks are especially vulnerable to hook injuries¹². Regarding the 2014 DL trial, 14% of sharks were found dead on arrival or had to be destroyed due to their injuries indicating just how lethal the gear can be. Most worrying was the fact that the majority of sharks caught were non-target (undersized) sharks and hence were due to be spared. WA Fisheries admit however, that a proportion of these would have died post release¹³. Indeed, there were horrific reports of sharks being released "alive", that were observed sinking to the bottom of the ocean, or having hooks cut out by operators in the most brutal and careless manner. DL and SDL procedures are similar in some ways, and hence the potential for similar detrimental outcomes is real. It is also worth mentioning that the Curtin research (above mentioned) also found that tagging sharks could render them at greater risk from predators. Finally, we expect that fatalities will comprise non-target animals also. Regarding the NSW SDL trial, since December 2016, approximately 145 non-target animals (including non-target sharks) have been caught¹⁴. While these animals were released "alive", it can be assumed that some of these will have died post release due to their injuries.

THERE ARE CONCERNS THAT THIS ACTION WILL BE EXPANDED AND ULTIMATELY LEAD TO AN INTENTIONALLY LETHAL CAMPAIGN similar to the cull implemented in 2014 by Premier Barnett. If this happens, it could have devastating consequences for the marine environment, and cost the taxpayer many millions of dollars without necessarily improving safety to ocean goers.

SHARKS ARE BEING DEMONISED: Utilising drastic shark hazard mitigation measures reinforces the negative view, so often sensationalised in the media, that sharks are "monsters" who "lurk", "stalk" and "prey" on humans, and that

something must be done. This portrayal is irresponsible as it exaggerates the risk, minimises personal responsibility, encourages negative sentiment towards sharks, and puts them in danger of further decline.

What we want the WA Government to do:

DO NOT PROCEED WITH THIS TRIAL. WAIT FOR SOLID EVIDENCE FROM NSW THAT SDLs INCREASE SAFETY AND PROTECT SHARKS before considering their use in WA. By solid evidence we do not mean anecdotal reports or preliminary findings. We mean scientific data that shows a *statistically significant decline* in shark incidents due to SDL use, and is an outcome which doesn't put shark populations at risk.

BETTER PROMOTE TECHNOLOGY THAT DOES HAVE SCIENTIFIC BACKING by offering a higher rebate when purchasing approved shark repellent devices such as the Shark Shield/Ocean Guardian¹⁵, and by including other promising repellents in the rebate scheme such as the Rpela¹⁶. The government should also support developers of currently approved devices to further refine the technology especially for surfers.

PROVIDE A MORE TIMELY RESPONSE TO THE REMOVAL OF WHALE CARCASSES THAT ARE KNOWN TO ATTRACT SHARKS. In addition, address the issue of migrating salmon and seals, as well cray pot use for attracting sharks. Provide appropriate warning signs about all of these risks.

TRIAL OTHER SYSTEMS THAT DO NOT RISK THE ENVIRONMENT. Consider technologies such as the Ocean Guardian BEACH01¹⁷, the SharkSafe Barrier¹⁸, the Eco Shark Barrier¹⁹, Shark Spotters²⁰, as well as drones²¹. In addition, increase relevant warning signs at all beaches, and install shark trauma medical kits²² at remote beaches.

BETTER ASSIST COMMUNITIES TEMPORARILY AFFECTED BY SHARK INCIDENTS. This could involve investment in new tourism ventures such as responsible shark activities that have been an economic boon for other coastal communities around the world (e.g., Cape Cod, USA²³). Communities should also be encouraged to time certain events (e.g. surfing competitions) in a way that minimises risk to competitors.

DO MORE TO COUNTER NEGATIVE STEREOTYPES AND SENSATIONALISTIC REPORTS REGARDING SHARKS by conveying a more constructive, moderate, and realistic message. This could include education about the small risk that sharks pose to ocean users compared to greater risks such as drowning, in addition to the importance of sharks for the health of our ocean environment. This education should also emphasise personal responsibility when using the ocean. Recent research by Peppin-Neff et al., suggests that modifying perceptions of intentionality, reducing fear, and increasing pride in sharks, are important targets of education and would help reduce support for lethal measures²⁴. Education should especially be directed towards policy makers, including politicians, to encourage more moderate responses, and minimise "knee jerk" reactions including extreme/outlandish rhetoric that often occurs following an incident. Finally, more effort should be made by Fisheries to counter messages conveyed by sensationalistic media reports immediately following an incident to mitigate the damage that such reports cause.

CONCLUDING COMMENTS AND SUGGESTIONS: We ask that the WA Government do not overreact when shark incidents occur and measure their response according to the risk. Shark incidents are incredibly rare, with an average of less than one fatality per year in WA. The risk of drowning in our ocean is far greater with approximately 15 deaths per year (17 reported in 2014²⁵). Obviously, this is a more serious issue which should attract more attention and resources. Additionally, the WA Government should not be quick to conclude that shark incidents are a serious threat to the economy. While there are anecdotal reports from some that this is the case, McPhee notes that there is no independence evidence regarding the negative impact of shark incidents on economic activity broadly, and suggests that revenue rather than being withheld, is redistributed²⁶. And as mentioned before, some communities throughout the world are benefitting from the additional revenue that responsible shark tourism can bring. It is particularly ironic that the Government are promoting this trial as "scientific" when one of the reasons they are conducting it - economic protection, lacks scientific evidence. While SDL trial is being promoted as "non-lethal", this term is quite misleading since the procedures used are very invasive and as such are harmful or deadly to some animals. SDLs are also a slippery slope that could eventually lead to an intentionally lethal campaign. We believe that the majority of Western Australians do not want to go down the lethal path that Queensland and New South Wales have been on for many decades now. Regarding Australia's many other deadly creatures, the tendency is to respect them, leave them alone, accept the risk they pose, and exercise personal responsibility, instead of interfering with them or killing them. So why should sharks be any different? And the fact that many sharks are protected by state, federal and international laws, and are recognised as playing a crucial role in maintaining the health of our oceans which we all benefit from, is an even more compelling reason why we should leave them alone.

Thank you

17 December 2018

References

1. <http://www.fish.wa.gov.au/About-Us/News/Pages/WA-to-conduct-scientific-trial-of-SMART-drumlines.aspx>
2. <https://www.change.org/p/premier-mark-mcgowan-say-no-to-the-smart-drumline-trial-in-wa?fbclid=IwAR1j9ogrG3fge4wbul5vP0NiyT5UT5wt1AnSVwLEkCTMJYvrDccye0BODi4>
3. <https://zslpublications.onlinelibrary.wiley.com/doi/full/10.1111/acv.12096>
4. <https://www.dpi.nsw.gov.au/fishing/sharks/management/smart-drumlines>
5. <https://www.abc.net.au/news/2018-11-07/ballina-shark-attack/10471810>
6. <https://thewest.com.au/news/australia/swimmers-request-drum-line-removal-ng-ya-364402>
7. <https://www.perthnow.com.au/news/wa/wa-shark-study-questions-affect-of-tagging-on-animals-feeding-ability-ng-535c6d51fa06b293d0addb17cd7d9c27>
8. https://oceana.org/sites/default/files/reports/Predators_as_Prey_FINAL_FINAL1.pdf
9. <https://www.ncbi.nlm.nih.gov/pubmed/17395829>
10. https://www.abc.net.au/radio/programs/am/massive-loss-of-sharks-off-australias-east-coast/10618662?fbclid=IwAR0pRF4BEFbmOuih9aXu6DSLdxGL_LYpV5S8GpF9M6OYhdiNjbgml8oYj58
11. <https://www.perthnow.com.au/news/wa/wa-speaks-two-thirds-of-west-australians-dont-want-drum-lines-used-to-slaughter-sharks-ng-55cd21419d057f9a82b7ba2f6484fe41> (full outcome results available on request)
12. <https://www.publish.csiro.au/mf/pdf/MF08362>
13. <https://www.dpc.wa.gov.au/publications/documents/review%20-%20western%20australia%20shark%20hazard%20mitigation%20drum%20line%20program%202013-14.pdf>
14. <https://www.dpi.nsw.gov.au/fishing/sharks/management/smart-drumlines/1-31-october-2018>
15. <https://sharkshield.freshdesk.com/support/solutions/folders/14000105539>
16. <https://www.rpela.com>
17. <https://sharkshield.com/product-category/beach/>
18. <https://www.sharksafesolution.com/our-product/>
19. <http://www.ecosharkbarrier.com.au>
20. <http://sharkspotters.org.za>
21. <https://www.spatialsource.com.au/unmanned/perth-multispectral-drones-sharks>
22. <https://tacmedaustralia.com.au/products/aquatic-trauma-kit>
23. <https://www.cnn.com/2018/09/01/local-businesses-and-tourists-embrace-cape-cod-great-white-shark-boom.html>
24. Christopher Pepin-Neff & Thomas Wynter (2018): Save the sharks: re-evaluating and (re)valuing feared predators, *Human Dimensions of Wildlife*, DOI: 10.1080/10871209.2018.1539887

25. <https://www.mybeach.com.au/safety-rescue-services/beach-safety/research/>

26. https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Sharkmitigation

Additional References

<http://www.sharksavers.org/en/education/the-value-of-sharks/sharks-and-ecotourism/>

https://epublications.bond.edu.au/sustainable_development/221/

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0074648>

<https://publications.csiro.au/rpr/download?pid=procite:1d0d13e5-7a60-4e65-be78-636e6f2dd22e&dsid=DS1>

<https://theconversation.com/factfile-the-facts-on-shark-bites-and-shark-numbers-76450>

<https://taronga.org.au/conservation/conservation-science-research/australian-shark-attack-file/2018>

<https://oceana.org/reports/predators-prey-why-healthy-oceans-need-sharks>

<http://www.environment.gov.au/biodiversity/threatened/publications/recovery/white-shark-issues-paper>