



Committee Secretary
Senate Standing Committees on Environment and Communications
PO Box 6100
Parliament House
Canberra ACT 2600

23rd February 2017

Dear Sir/Madam,

RE: Submission to the Senate Inquiry into shark mitigation and deterrent measures

Australia for Dolphins is grateful for the opportunity to provide a submission to the Senate Inquiry into shark mitigation and deterrent measures ("Inquiry").

Australia for Dolphins (AFD) is a not-for-profit organisation based in Melbourne. AFD's mission is to protect small cetaceans (dolphins and whales) from cruelty. Our work extends to protecting the health of our oceans and its inhabitants.

It is AFD's view that lethal shark control programs such as mesh nets and drumlines result in an unacceptable level of bycatch of threatened marine wildlife. These programs impact not just critically endangered sharks such as the grey nurse shark, but also dolphins, whales, rays, turtles and many other threatened and protected species. We ask that the Inquiry carefully consider the impact to Australia's precious marine life when considering shark mitigation and deterrent measures.

AFD also urges the adoption of non-lethal solutions to this issue. Unfortunately, the ocean can be a dangerous environment and it is important for beach goers to be educated about the risks involved. While the chance of a shark attack is rare, it is not possible to entirely mitigate the risk. Beach goers can be better protected with a range of alternative non-lethal options such as shark spotters programs, community education programs, aerial drones and electric shark repellents. State governments should also work closely with local councils and Surf Life-Saving clubs to improve emergency response times.

The management of sharks is a vexed and emotive issue. However, AFD submits that the current lethal measures in place are neither protecting humans from sharks, nor are they protecting marine life. Instead, they create a false sense of security for beach-goers. At the same time they indiscriminately kill thousands of non-target animals.

Under the *International Union for the Conservation of Nature* and our own *Environment Protection and Biodiversity Conservation Act*, Australia has a responsibility to protect threatened marine species. The government should be taking this duty more seriously by investing in non-lethal solutions.

Thank you very much in advance for considering this submission. Please don't hesitate to get in touch with me if you have any questions.

Yours sincerely,

Jordan Sosnowski, Advocacy Director

Australia for Dolphins will provide a response to the Terms of Reference **in bold** below:

1. research into shark numbers, behaviour and habitat;
2. **the regulation of mitigation and deterrent measures under the Environment Protection and Biodiversity Conservation Act 1999, including exemptions from a controlled action under section 158;**
3. the range of mitigation and deterrent measures currently in use;
4. **emerging mitigation and deterrent measures;**
5. **bycatch from mitigation and deterrent measures;**
6. **alternatives to currently employed mitigation and deterrent measures, including personal responsibility and education;**
7. the impact of shark attacks on tourism and related industries; and
8. any other relevant matters.

TERM OF REFERENCE #2

The regulation of mitigation and deterrent measures under the Environment Protection and Biodiversity Conservation Act 1999, including exemptions from a controlled action under section 158

It is AFD's view that the granting of exemptions from a controlled action issued under section 158 of the *Environment Protection and Biodiversity Conservation Act 1999* ("EPBC Act") should be more strictly regulated.

For example, following an application from the NSW Minister for Primary Industries on 16 November 2016, the Minister for the Environment and Energy, the Hon Josh Frydenberg MP granted the NSW Government an exemption under the EPBC Act to conduct the NSW North Coast Shark Meshing Trial.

According to the Hon Minister Frydenberg, the reason for the hasty granting of this exemption was to enable the NSW Government to commence the trial immediately in anticipation of the peak holiday season.

In less than one month of the shark meshing trial being implemented, the Department of Primary Industries report found that 43 animals became entangled in the nets, with 12 animals dead, including a bottlenose dolphin and a green turtle.¹

Overall in NSW in 2015-2016, the report shows that 86% of the 748 marine animals caught were threatened, protected, or species not intended to be targeted by the shark nets. A total of 364 marine animals died from the nets in NSW. There was a four-fold increase in the number of animals caught and 300 per cent increase in marine animals found dead in the nets.

Under section 158(4) of the EPBC Act, the Minister may only grant an exemption "if he or she is satisfied that it is in the national interest".

¹ New South Wales Department of Primary Industries, Shark Meshing (Bather Protection) Program 2015-2016 Annual Report, http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0010/693028/2015-16-SMP-Annual-Performance-Report.pdf

It is AFD's view that given the significant death toll caused by shark nets (the above example outlining the harm in NSW alone), alternative methods of shark mitigation and deterrence need to be adopted. Further, given a high proportion of tourists come to Australia to view our beautiful marine life, it is not in the national interest to deploy nets which cause significant harm to already threatened and endangered marine animals. Indeed, the nets are arguably doing the most harm to the animals that tourists come to Australia to see.

It is therefore AFD's opinion that the current regulation of mitigation and deterrent measures under the EPBC Act is not fulfilling the stated objects of the EPBC Act as outlined in section 3 – namely to provide for the protection of the environment and promote the conservation of biodiversity. Exemptions issued under section 158 should only be granted in very rare instances and not in the case of lethal shark nets, where the data demonstrates the threat to marine life is high.

TERM OF REFERENCE #4

Emerging mitigation and deterrent measures

AFD is aware of a number of emerging mitigation and deterrent measures for minimising the risk of shark attacks.

Shark spotters program

In Byron Bay NSW, a shark spotters program was initiated at Wategos Beach. The program improves beach-goers' safety by positioning "spotters" at strategic points along the beach and coastline. When a shark is spotted, a loud warning is issued and emergency assistance is brought on hand in the case of an incident. The spotters also work closely with local Surf-Life saving clubs.

The shark spotting trial in Byron Bay was highly effective, and implemented at minimal cost. The trial spotted five shark sightings compared to only one recorded by authorities.

The shark spotters method has worked effectively in South Africa for over ten years, and the NSW State Government's own report on shark mitigation options² found it to be the most effective mitigation measure.

Aerial surveillance

Drone technology is growing at a rapid pace, and a recent trial in 2016 of the Westpac-funded "Mini Ripper" drone was found to be very effective. The drone is fitted with a video camera, loudspeaker and an emergency pod containing lifesaving equipment capable of being dropped into the ocean remotely.

Further research is currently being conducted at Sydney's University of Technology to fit the drone's video camera with specific software that would give it the ability to recognise a shark in the water.

² New South Wales Department of Primary Industries, Report into the NSW Shark Meshing Program http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0008/276029/Report-into-the-NSW-Shark-MeshingProgram.pdf

More investment in non-lethal options and emerging technology such as aerial surveillance and automated recognition is necessary.

Electric shark deterrent

There are a number of electric shark repellents currently available, all with differing levels of effectiveness. One commercial deterrent called the “Shark Shield” may be almost 100 per cent effective, according to a recent study of 322 tests.³

The electric field generated by the wearable antenna is designed to over-stimulate the shark's electro-sensory system.

It is AFD's view that the government should be investing in emerging shark mitigation and deterrent measures such as those outlined above, rather than continuing with out-dated techniques such as shark meshing and drumlines.

Eco-barriers

Eco-barriers are made from nylon, with a clip-together interlocking mechanism hung between a nylon float line on the water surface and an anchored line along the seabed. Rather than being designed to catch and kill sharks, the barrier encloses bathers and creates a protected area that keeps sharks out.

These barriers have been successfully installed at both Coogee Beach and Sorrento Beach in Western Australia. While these barriers are difficult to use on beaches with rough surf, more research into this type of non-lethal solution is needed.

TERM OF REFERENCE #5

Bycatch from mitigation and deterrent measures

The current mitigation and deterrent measures adopted by various state governments result in significant bycatch. This in turn threatens many threatened and endangered marine animals that are supposedly protected by the EPBC Act.

Shark nets in NSW alone kill on average at least 275 animals per year (measured between 1950 and 2008), and the majority of animals killed pose no threat to people. Five critically endangered grey nurse sharks were killed in the NSW nets in the 2015-2016 period. This is a species with a likely population of only 1,000 individuals left.

The recent report by the Department of Primary Industries in NSW shows that 40% of sharks trapped in NSW nets are actually found on the beach side. This means that the nets are not actually effective in minimising the risk of shark and human interaction.

In Queensland, over 57,000 sharks of various species have been caught in the shark control program, with the majority posing no threat to humans. Approximately 30,000 other marine

³ Natsumi Penberthy, “Great White Shark deterrent almost 100 per cent effective” (2016) *National Geographic*, <<http://www.australiangeographic.com.au/news/2016/07/great-white-shark-deterrent-almost-100-per-cent-effective>> (accessed 5 February 2017).

animals including whales, dolphins, dugongs, seals, marine turtles, rays and others have been caught as bycatch.⁴

There is no conclusive evidence that shark nets work to prevent shark attacks. Not only this, but the nets indiscriminately kill thousands of non-target species which pose no threat whatsoever to humans. Alternative measures that do not have such a high death toll should be urgently adopted.

TERM OF REFERENCE #6

Alternatives to currently employed mitigation and deterrent measures, including personal responsibility and education

Aside from the possible alternative measures outlined in reference point #4 above, personal responsibility and education are also integral to beach safety.

Personal responsibility

It is important for the public to take responsibility for their own actions when it comes to beach safety. This includes bathers understanding when there are particular times to avoid the water and what to watch out for.

Despite the strong media focus on shark attacks, the general community agrees a balance needs to be found between ocean users and protecting marine life. In a Western Australian survey of ocean users using quantitative and qualitative research methods, it was found that the strategies for managing shark hazards that were most strongly supported were improving public education about sharks, and encouraging ocean users to understand and accept the risks associated with using the ocean.⁵

Other strategies which were widely supported included developing shark deterrents and increasing surveillance and patrols. The most strongly opposed approaches were those that killed sharks including culling, proactive catch-and-destroy measures, baited drumlines, and shark nets.

The Government cannot ever guarantee public safety in the ocean, but it can adopt a risk-management approach to the issue. By adopting non-lethal strategies, the Government can not only better protect bathers, but also align its policy with community values.

Education

Awareness-raising about the actual risk of shark attacks is also important. Overall, the NSW Department of Primary Industries' report⁶ found that during 2015-16 there were 11 shark

⁴ Prof Jessica Meeuwig, "Has Queensland really saved lives by killing thousands of sharks?" (2014) *The Conversation*, <<https://theconversation.com/has-queensland-really-saved-lives-by-killing-thousands-of-sharks-23437>> (accessed 2 February 2017).

⁵ Leah Gibbs "More shark nets for NSW: why haven't we learned from WA's cull?" (2016) *The Conversation*, <<https://theconversation.com/more-shark-nets-for-nsw-why-havent-we-learned-from-was-cull-66985>> (accessed 2 February 2017).

⁶ New South Wales Department of Primary Industries, Report into the NSW Shark Meshing Program http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0008/276029/Report-into-the-NSW-Shark-MeshingProgram.pdf

attacks in NSW, none fatal. The chances of a shark attack are very slim however there is a skewed perception amongst many people due to media and movies promoting a fear of sharks.

More awareness needs to be raised about the actual risk (as opposed to the perceived risk) of a shark attack. AFD therefore urges the Government to invest more in public education and awareness programs.

In conclusion, AFD is grateful for the opportunity to comment on possible alternatives to the current shark mitigation and deterrent measures adopted. AFD submits that shark nets are not adequately protecting bathers and are indiscriminately killing protected and threatened species. AFD strongly urges the use of non-lethal technologies to better ensure beach-goers' safety and the protection of marine animals.