

**Submission  
No 47**

# **MANAGEMENT OF SHARKS IN NEW SOUTH WALES WATERS**

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**Submission to Parliamentary inquiry into shark threat**

This submission will focus on outlining the importance of procuring sustainable and safety-conscious measures to address the issue of sharks across NSW. I would like to begin more generally with addressing the current situation for sharks across NSW, and indeed assessing the threats that shark face as well as beach-goers. I will then turn to the Terms of Reference:

1. The impact of shark attacks on tourism and related industries
2. Changes in shark numbers, behaviour and habitat
3. Adequacy of management strategies
4. Measures to prevent attacks by sharks, including strategies adopted in other jurisdictions

Sharks are essential to the healthy functioning of our marine biodiversity. Prominent scientist and the Head of NSW Department of Primary Industries' shark research centre, Vic Peddemors has outlined the importance of the shark population in the marine ecosystem. In a 2011 TED presentation, he quotes "sharks play a major role in maintaining that ecosystem health", citing an example of diminished scallop populations in the US as being caused by diminished shark populations (<https://www.youtube.com/watch?v=KlcZwSsceL0>). However, as a predator, sharks undoubtedly control many marine populations across the oceans which regulate the marine ecosystem. A quarter of sharks, globally, are already listed as endangered by the International Union for the Conservation of Nature. Further, some breeds including the grey nurse shark (rarely known for threatening human populations) are in need of our protection now more than ever. They are listed as an endangered species with only 1500 across NSW (<http://www.marineconservation.org.au/pages/threatened-spec-grey-nurse-sharks-142.html>). As noted by the Marine Conservation Organisation, in 2011, a NSW government initiative was put in place for the protection of these sharks, by enlarging the sanctuary zones at the Solitary Islands, as well as the banning of harmful forms of fishing to these sharks. However this measure has been removed by the subsequent government, offering no proper safety measurement in its place. This is a disastrous example of government action that is utterly destructive and provides no sustainable safety measures that are necessary for an endangered species.

## 1. The impact of shark attacks on tourism and related industries

Whilst it is important for Government to work with the tourism industry and other related industries, it is especially important to ensure that sensationalised reports do not outnumber our exposure to facts. This has the potential, more than any real risk, to deter or even frighten both local and international visitors. Further, it offers no educational advice to ensure beach-goer safety.

Vic Peddemors used his TED talk to look into human deaths caused by sharks, on a comparative scale to humans that have drowned in NSW. He reports that in 2011, there were 315 drownings, 35 of which were in open waters. In contrast, there was a total of 4 shark fatalities. We must not lose sight of the threats that humans cause to sharks, at exceptionally high numbers globally. Media reports have a tendency to hyperbolise the extent of the problem of these “man-eaters”, and lamentably, frame sharks as morally repugnant and cruel killers, seen through such fear-mongering titles as “Sharks: Tracking data shows killers’ deadly game of tag on the coast of NSW”, courtesy of the Telegraph, September 28 2015 (<http://www.dailytelegraph.com.au/news/nsw/sharks-tracking-data-shows-killers-deadly-game-of-tag-on-the-nsw-north-coast/story-fni0cx12-1227546226965?sv=942f97e53d56a51f3eddf7d6aab80a01>). This image of sharks is ubiquitous and destructive, and Government must not pander to this public fantasy that has been stirred through Hollywood and current sensationalised nature documents, such as “Shark Week”. Such images undoubtedly stir public fear of sharks and make a reasonable and sensible approach more difficult to consider.

The public perception of sharks must be corrected through proper education, and understanding shark populations. Whilst reportedly, there has been a concerning increase in shark attacks across NSW, and the very public shark attack to surfer Mick Fanning, governments do need to respond, and they must do so in coordination with tourism and other related industries, as well as conservation, research and marine life industries. Our approach to combat the destructive media image of sharks must involve many stakeholders. This is imperative in order to educate the public, and realign public perception towards the safety of humans and sharks alike. I point you to the international reaction to the culling program in early 2014 in Western Australia, as one of disgust and viewed as completely unsustainable and inappropriate (<http://www.independent.co.uk/news/world/australasia/australia-first-shark-killed-as-controversial-culling-policy-begins-9088067.html>).

## 2. Changes in shark numbers, behaviour and habitat

Shark populations have experienced a dramatic decrease across the globe for decades (<https://books.google.com.au/books?id=BpzAAwAAQBAJ&pg=PA130&dq=protection+of+sharks+in+nsw&hl=en&sa=X&ved=0CCQ6AEwAGoVChMI14-FqILGyAIVonSmCh3yiQBZ#v=onepage&q=protection%20of%20sharks%20in%20nsw&f=false>, p. 89). This reading indicates that sharks are particularly vulnerable to fishing mortality due to having few offspring and sexually maturing late, and Government must consider sustainable fishing tactics for their protection. As stated, their long lives however, provide us with the opportunity to apply mark-recapture analysis, enabling us to measure survival and dispersal amongst shark populations (p. 89).

Whilst Premier Mike Baird calls the recent spike in shark attacks “unprecedented” and “extraordinary”, we can also look at environmental and human-caused factors of climate change. Climate change is likely to have an impact on shark populations, and indeed if more shark attacks have been occurring in NSW due to warmer waters, the realisation to act on climate change becomes all the more pertinent. As reported in the ABC (<http://www.abc.net.au/news/2015-02-10/researchers-blame-shark-attack-rise-on-population-increase/6083564>), along the northern coast of NSW, warmer waters have been increasing shark activity. Addressing climate change requires serious long-term commitment with short-term and long-term goals put in place. The government must treat this as the emergency that it is through proper policy, and pressuring Federal Government to do the same. I implore State Government to not fall under the pressure of conservative media output from those such as the Daily Telegraph that advocates for the disastrous use of nets and drum lines.

We have evidence to say that shark numbers are decreasing, while human populations are increasing significantly (<http://www.abc.net.au/news/2015-02-10/researchers-blame-shark-attack-rise-on-population-increase/6083564>) with a significant rise in beach-goers. Research therefore must include the percentage increase in shark attacks rather than the number of fatalities in total in order to understand the likelihood of attacks occurring, and whether they have in fact increased in relative terms.

Through all of this, research and the involvement of scientists is essential, and I commend Premier Baird’s commitment to this approach and not pander to the unreasonable and cruel approach of culling. The recent announcement of the \$250,000 campaign to involve water surveillance is the direction that we need to take to find a safe and sustainable outcome for this issue (<http://www.abc.net.au/news/2015-08-14/nsw-launches-shark-tagging-surveillance-in-wake-of-attacks/6696392>). It is also promising to hear that an education program will be available to educate the public, “shark smart”. This should be aimed at proper education in terms of shark populations and migration patterns, as well as times that are safer to swim and areas that are known to be safer. It must not be forgotten that many sharks are under threat themselves, and the reaction to cull threatens many species beyond sharks; putting the whole ecosystem under stress. Of course, education programs for the public rely on accurate information that will benefit from scientific evidence undertaken. Our current knowledge does not allow us to accurately ascertain why certain areas are experiencing an increase in shark attacks (though Dr Daniel Bucher has confirmed that there is an overall decline in shark numbers <http://www.abc.net.au/news/2015-02-10/researchers-blame-shark-attack-rise-on-population-increase/6083564>).

We must continue and improve funding for scientific research on shark populations in order to be a leading example of research in the field. Further, State Government must push for a whole-government approach and ensure that federal government backs scientific studies and sustainable measures.

### 3. Adequacy of management strategies

Adequate management of sharks is undeniably a challenge, in order to preserve the safety of both humans and sharks. However, there are certain outdated methods that are particularly detrimental to sharks and other marine life. These methods completely overlook the need for conservation and are archaic responses, globally criticised for their complete lack in sustainability.

The Shark Meshing Program (SMP) is one such example. Marine ecologists have stated that this prevents few deaths and has a drastic and adverse effect on other marine life beyond sharks (<http://www.smh.com.au/environment/marine-ecologists-urge-rethink-of-shark-netting-after-fatal-attack-20131202-2ym2x.html>). This article reports that over the last 20 years, almost 4000 sea animals have been trapped in these nets along NSW beaches. This includes 100 great white sharks and 49 tiger sharks. This demonstrates the huge numbers of sea life effected by these sea-sweeping nets, including such species as stingrays, dolphins, whales, seals and turtles, among others. Further, they do not necessarily stop sharks. They are an unviable option sustainably and must be removed and replaced with other ethical and sustainable measures. This is a management strategy that dates back to 1935; back when machine guns and explosives were advocated in submissions to deal with sharks (<http://www.abc.net.au/science/articles/2002/03/07/2116717.htm>). It seems almost as ludicrous to think that such cruel and unsustainable measures are still considered acceptable by any level of government.

Education remains at the forefront of sustainable and proactive measures. Government must disseminate educational material on swimming safety, and use all avenues (including social media) to be heard. There must be a multi-disciplinary approach taken by governments, who must fund shark awareness education programs, and ensure that people on the front line (such as life savers) have access to research. In order to adequately address shark management, government must act to facilitate a whole-industry response that the public can rely upon.

### 4. Measures to prevent attacks by sharks, including strategies adopted in other jurisdictions

As previously mentioned, the SMP measure, as well as any form of net prevention, is an archaic and ecologically disastrous approach that is not effective. There is current research in the field that is responsive to the sustainability argument, which the government must align with.

“No NSW Shark Cull” (<http://www.nonswsharkcull.net/#qanda>), a sustainability-focused group, advocates for the use of the ‘eco shark barrier’; this is a barrier anchored from the sea bed to the surface, and as such is able to keep sharks away from human-populated areas. It is vastly different to a net as it is able to support, rather than trap marine life, and further, is financially viable. as well as the ‘clever buoy’ is listed as a sustainable alternative. This approach in particular is a product of our technological advances using sonar technology, enabling lifeguards and other personnel to receive real-time information on the detection of sharks. These measures, as well as aerial patrol and a wide-spread education campaign, provide an effective and safe alternative to other ineffective and environmentally unsound measures.

Research must be undertaken in order to guide effective measures. CSIRO suggests the increase in research in “life history, population status, spatial ecology, environmental effects, ecosystem role and human impacts”

(<http://www.publish.csiro.au/?paper=MF11086>) to understand the movements of sharks.

It is essential that these measures are put in place and allowed to take effect. Whilst shark attacks are undoubtedly a traumatic and horrendous affair for anybody involved, we cannot completely stop the risk of shark attacks. We must instead understand that the minute chance of being attacked by a shark, and use the technologically-advanced and environmentally-appropriate measures that we have on offer to minimise the risk. The public must be aware of the inherent and in the rare case, unavoidable instances of shark attacks, and be made aware how to mitigate this risk (e.g. by swimming between flags, or swimming on patrolled beaches).

The revenge-driven and absurd reaction in culling offers benefit to nobody, and merely puts our marine life as a whole under great danger. This is not the kind of example that any jurisdiction in Australia should be setting on a global scale. Instead, we should be at the forefront of alternative and effective management; using the technology at our disposal to lead the way in sustainable responses to shark management.

I urge the government to use the alternatives that have been proven to be effective. These measures are in touch with both the local and international concern of sustainable and environmentally sound practices, and must be the direction forward.

Sincerely,



Greens Councillor