



## COMMENT ON THE REFERRAL OF A PROPOSAL: SHARK DRUM LINE DEPLOYMENT, MANAGEMENT AND ASSOCIATED SERVICES

### About Us

The Animal Defenders Office (ADO) is an incorporated, non-profit community legal centre that specialises in animal law. Our mission is to use the law to protect animals, which includes:

- assisting individuals and groups to secure animal interests through existing legal mechanisms;
- increasing public awareness of animal protection matters; and
- working to advance animal interests through law reform.

The ADO has been in operation since December 2013, and has a mandate to consider both local and national animal protection issues. Further information about the ADO can be found at [www.ado.org.au](http://www.ado.org.au).

### About this submission

This submission is made in response to the referral of a proposal to the Environment Protection Authority (EPA) under section 38 of the *Environmental Protection Act 1986* (WA). The proposal involves the deployment, management and maintenance of drum lines off the Western Australian Coast, as part of measures announced in December by the Western Australian Government to deal with the so called “threat” of sharks in the area. The ADO welcomes the opportunity to comment on this referral.

### Summary of submission

The ADO believes that, having regard to the objects and principles of the *Environmental Protection Act 1986*, including the precautionary principle, as well as the EPA’s environmental factors and associated environmental objectives (particularly in relation to maintaining the diversity, geographic distribution and viability of marine animals at the species and population level), it is appropriate and necessary that the proposal is assessed by the EPA.

The ADO has a number of concerns relating to the proposal, primarily in relation to:

1. The potential effect of the proposal on the three targeted shark species;
2. The potential effect of the proposal on other marine animals (including other shark species) and their environment;
3. The lack of evidence provided to support assertions that the proposal will not have an adverse effect on marine animals and their environment, including an apparent failure to consider relevant conservation data; and
4. The lack of evidence provided to support claims that the proposal will address issues associated with human safety or public amenity.

## Recommended level of assessment

In regards to the level of assessment, the ADO makes the following submissions:

1. That the proposal should be assessed at the level of 'API Category B - Project Environmentally Unacceptable'; and
2. If Recommendation 1 is not accepted, that the proposal be assessed at the level of 'Public Environmental Review' (PER).

Further information supporting our submission is outlined below.

## Potential effect of proposal on targeted species

### *White Sharks*

The White Shark is currently listed as 'Vulnerable' and 'Migratory' under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). It is listed as rare or likely to become extinct under Schedule 5 of the *Wildlife Conservation Act 1950* (WA) and protected under Schedule 46 of the *Fisheries Resources Management Act 1994* (WA). It is also listed under Appendices I and II of Convention on Migratory Species of Wild Animals and listed as 'Vulnerable' on the 2010 International Union for Conservation of Nature (IUCN) Red List.

The conservation status of the species has been subject to a number of recent studies, including a review by the Commonwealth Department of Environment which supported the ongoing listing of the species as 'Vulnerable', forming the basis of a 2013 Recovery Plan. That plan identifies principal threats to the White Shark as including mortality related to by-catch and illegal fishing, and mortality related to shark control activities such as beach meshing or drum-lining.<sup>1</sup>

While the associated document 'Research Advice on the Proposed Shark Mitigation Strategy Using Drum Lines for January to April 2014' (research advice) claims that measures are designed to have a "localised impact on the relative number of individuals of the targeted species", no evidence or further information is provided to support this claim. A localised impact is not equivalent to a minimal impact, and any claim that low numbers of deaths would have "negligible risk" appears contrary to information contained in the Commonwealth Recovery Plan, as well as relevant literature which suggests that the diversity and abundance of sharks is vulnerable to even light fishing pressure.<sup>2</sup>

In light of these information failures, and having regard to the conservation status of this species, including existing environmental measures and policies to protect it, it is important that any proposal that has the potential to adversely affect the species is subject to appropriate environmental assessment, and supported by science.

### *Tiger sharks*

Despite never being implicated in a fatality in the South-West and Metropolitan regions, tiger sharks are also targeted by the proposal, and appear to be comprising the bulk of the catch, with reports

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<sup>1</sup> Department of Sustainability, Environment, Water, Population and Communities (2013) 'Recovery plan for the White Shark (*Carcharodon carcharias*)', accessed on 18 February 2014 at <<http://www.environment.gov.au/resource/recovery-plan-white-shark-carcharodon-carcharias>>.

<sup>2</sup> F Ferretti, et al (2010) 'Patterns and ecosystem consequences of shark declines in the ocean' *Ecology Letters* 13(8), accessed on 19 February 2014 at <<http://www.ncbi.nlm.nih.gov/pubmed/20528897>>; D McPhee (2012), 'Likely Effectiveness of Netting or Other Capture Programs as a Shark Hazard Mitigation Strategy in Western Australia', accessed on 18 February 2014 at <[http://www.fish.wa.gov.au/Documents/occasional\\_publications/fop108.pdf](http://www.fish.wa.gov.au/Documents/occasional_publications/fop108.pdf)>.

suggesting that 17 tiger sharks have been killed in just two months of operation of the proposal.<sup>3</sup> This calls into question claims made in the research advice that:

[T]he number of tiger sharks expected to be killed in this program may only be in the order of 10-20 which would again be considered to have an insignificant impact on this population.<sup>4</sup>

While Tiger Sharks are generally considered to be more resilient than White Sharks, they are listed as 'Near Threatened' on the IUCN Red List, primarily due to commercial fishing and by-catch driven by finning for shark-fin soup. These sharks typically reach reproductive maturity when 2.5-3.5 metres in length<sup>5</sup>, which makes it imperative that any proposal to kill those species which are greater than 3 metres is assessed for its potential effect on breeding capacity and future population levels. These concerns are not addressed in the research advice.

#### *Bull sharks*

Bull sharks are also listed as 'Near Threatened' on the IUCN Red List, primarily due to habitat loss as well as being targeted by both recreational and commercial fishers. They are the smallest of the three sharks, reaching maturity at 1.9 metres long and ultimately growing to an average of 3.6 metres long.<sup>6</sup> Studies suggest that female bull sharks return to the same estuary to breed, which also raises concerns about potential effects of the proposal on breeding capacity and population of these species. Claims made in the research advice as to the likelihood of impact on these species appear to be unsupported by appropriate scientific data.

#### **Potential effect on other animals**

The potential effects of the proposal are not confined to white sharks, tiger sharks, and bull sharks, but also have the potential to impact on species that pose little threat to human safety.<sup>7</sup> These may include the Grey Nurse Shark and the Whale Shark, which are both listed as 'Vulnerable'<sup>8</sup> and subject of Commonwealth Recovery Plans<sup>9</sup>, as well as other species which are listed internationally as 'Near Threatened', such as Hammerhead sharks and the Sandbar Shark. As noted in an independent report prepared for the Department of Fisheries (which is referenced in the research advice) there is also a risk that proposals of this nature have the potential to capture a wide range of other animals including marine turtles which are listed at Commonwealth and state levels, rays, and other mammals.<sup>10</sup>

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<sup>3</sup> Western Australian Department of Fisheries, 'Government Releases Shark Catch Data' accessed on 18 February 2014 at <<http://www.fish.wa.gov.au/About-Us/Media-releases/Pages/Government-releases-shark-catch-data.aspx>>; see also <<http://www.watoday.com.au/wa-news/wa-govt-confirms-17-tiger-sharks-killed-on-drum-lines-20140218-32xms.html>>

<sup>4</sup> R Fletcher, (2014) 'Research Advice on the Proposed Shark Mitigation Strategy using drum lines for January to April 2014', accessed on 18 February 2014 at <[https://consultation.epa.wa.gov.au/seven-day-comment-on-referrals/shark-drum-line-deployment-management/consult\\_view](https://consultation.epa.wa.gov.au/seven-day-comment-on-referrals/shark-drum-line-deployment-management/consult_view)>.

<sup>5</sup> IUCN Species Survival Commission, *Galeocerdo Cuvier* accessed on 19 February 2014 at <<http://www.iucnredlist.org/details/full/39378/0>>.

<sup>6</sup> IUCN Species Survival Commission, *Carcharhinus leucas* accessed on 19 February 2014 at <<http://www.iucnredlist.org/details/39372/0>>.

<sup>7</sup> FJ Dudley, (1997) 'A comparison of the shark control programs of New South Wales and Queensland (Australia) and KwaZulu-Natal (South Africa)', Ocean & Coastal Management accessed on 189 February 2014 at <<http://www.sciencedirect.com/science/article/pii/S0964569196000610>>; Curtis et al (2012) 'Responding to the Risk of White Shark Attack: Updated Statistics, Prevention, Control Methods and Recommendations' in ML Domeier (ed), *Global Perspectives on the Biology and the Life History of the White Shark*, (CRC Press, 2012).

<sup>8</sup> Environment Protection and Biodiversity Conservation Act 1999, s 179.

<sup>9</sup> The Grey Nurse shark is the subject of a Draft Recovery Plan, which is accessible at <<http://www.environment.gov.au/resource/draft-recovery-plan-grey-nurse-shark-carcharias-taurus>>.

<sup>10</sup> D McPhee, (2012), 'Likely effectiveness of netting or other capture programs as a shark hazard mitigation strategy in Western Australia', *Fisheries Occasional Paper* 108, Department of Fisheries, WA.

In relation to Grey Nurse Sharks, the supporting documentation refers to catch rate data from the 1990s (prior to the sharks listing) and a low “expected catch rate” to conclude that there would be a negligible effect on grey nurse populations. This advice appears to have little (at least documented) regard to the listing status of the Grey Nurse Shark, and the lack of current information in relation to West Coast populations of the species which is highlighted in the 2013 Commonwealth draft recovery plan.<sup>11</sup> Lack of sufficient information should not be used to form the basis of conclusions as to the likely impact of the proposal on the species, and should in fact, attract the operation of the precautionary principle.

In addition to issues associated with by-catch, the ADO is also concerned that any decline in the abundance of large predatory sharks is likely to result in adverse impacts on the environment in which these animals live, including ecosystem structure and function.<sup>12</sup> The role of sharks is vital to keep the health of the ocean in balance, and removing or reducing the population of a migratory apex predator has the potential to have significant impacts on the species composition and abundance of other marine life. This may be the case even if the number of deaths is relatively small.<sup>13</sup>

### **Potential for animal suffering**

Additionally, the ADO has concerns about so called “mitigation” measures in the proposal, and the potential for animal suffering that may occur as a result of baiting activities. While we recognise that monitoring is scheduled to occur from 6am to 6pm each day, this still leaves a substantial period of time during which marine animals may be captured and restrained, which has the potential to result in prolonged suffering and death. Similarly, the reference to ‘significantly large hooks’ in the research advice (which is absent from the statement of requirement) is vague, and further information is required if there is to be a proper assessment of whether and how this may address risks associated with by-catch.

### **Justification for the proposal**

While we recognise the importance of protecting human safety where possible, there has not been sufficient evidence provided to support any claim in this case, that the killing of animals is necessary to protect human safety. An examination of current literature suggests that it is likely that the supposed increase in the number of shark attacks, which has also been the subject of dispute,<sup>14</sup> is not the direct result of an increase in shark numbers (as to warrant controlled population measures), and reviews of similar shark programs in Hawaii and in NSW have raised doubts about the ability of these measures to prevent or significantly decrease shark attacks.<sup>15</sup>

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<sup>11</sup> Page 8 of the Draft Recovery Plan notes that while analysis of data up to 1997 indicates that the grey nurse shark was relatively abundant in temperate Western Australian waters in the mid to late 1990s, reporting of catch rates following listing of the species in 1997 effectively stopped, making more recent assessments of population size and trends difficult.

<sup>12</sup> F Ferretti, et al, above n 2.

<sup>13</sup> JK Baum and B Worm (2009) ‘Cascading top-down effects of changing oceanic predator abundances’, accessed on 19 February 2014 at <[http://www.fmap.ca/ramweb/papers-total/Baum\\_Worm\\_2009.pdf](http://www.fmap.ca/ramweb/papers-total/Baum_Worm_2009.pdf)>.

<sup>14</sup> See for e.g. ‘Western Australia shark cull condemned as futile after attacks fall’ accessed online on 19 February 2014 at <<http://www.theguardian.com/world/2014/feb/18/shark-cull-condemned-after-attacks-fall-five-year-low>>.

<sup>15</sup> See for e.g. FJ Dudley, (1997) ‘A comparison of the shark control programs of New South Wales and Queensland (Australia) and KwaZulu-Natal (South Africa)’, Ocean & Coastal Management accessed on 18 February 2014 at <<http://www.sciencedirect.com/science/article/pii/S0964569196000610>>; Curtis et al (2012) ‘Responding to the Risk of White Shark Attack: Updated Statistics, Prevention, Control Methods and Recommendations’ in ML Domeier (ed), *Global Perspectives on the Biology and the Life History of the White Shark*, (CRC Press, 2012); Department of Primary Industries, ‘Report into the NSW Shark Meshing (Bather Protection) Program’ accessed on 18 February 2014 at

Given the conservation status of these animals, it is imperative that actions which have the potential to adversely affect their viability are justified and supported by science. This is especially the case when those actions are carried out by government. In the absence of proper and detailed assessment, the ADO believes that there is a low level of confidence that this proposal is environmentally acceptable.

### **Conclusion**

The ADO believes that this proposal should be assessed as 'API Category B - Project Environmentally Unacceptable' because:

1. The proposal is inconsistent with the objects and principles of the *Environmental Protection Act 1986*, as well as established environmental policies, guidelines, and standards designed to protect vulnerable populations of animals and their environment (including with the international obligations which the legislation implements);
2. There is insufficient evidence provided to justify the proposal, including lack of detail as to how the conservation status of affected animals has been taken into account, and whether (and how) any potential impacts on marine animals might be managed;
3. There is a lack of detail and evidence suggesting if and how the proposed action will achieve its stated objectives of protecting human safety; and
4. The adverse effects of the proposal cannot be ameliorated because of the nature of the proposal (i.e. it is for the killing of certain protected sharks).

In the alternative, we suggest that this proposal would be appropriate for assessment by PER because of the factors outlined above, and because:

1. The proposal is of wide-ranging significance given the local, national and international conservation status of the potentially affected animals;
2. The proposal raises a number of significant environmental factors, including flow on effects on complex ecosystems and species populations, and strategic issues associated with shark management more generally, which warrant detailed assessment;
3. The level of public concern in relation to the proposal is significant<sup>16</sup> and there is a strong public interest in ensuring that actions taken by government that have the potential to have adverse effects on animals and their environment are justified and supported by science.

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<[http://www.dpi.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0008/276029/Report-into-the-NSW-Shark-Meshing-Program.pdf](http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0008/276029/Report-into-the-NSW-Shark-Meshing-Program.pdf)>; see also Department of Primary Industries 'Shark Meshing (Bather Protection) Program 2011-12 Annual Performance Report' accessible at <[http://www.dpi.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0010/467065/SMP-2011-12-Annual-Performance-Report-Aug-2013.pdf](http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0010/467065/SMP-2011-12-Annual-Performance-Report-Aug-2013.pdf)>.

<sup>16</sup> See for e.g. <<http://www.abc.net.au/news/2014-02-01/shark-protests-wa-catch-and-kill-perth/5232480>>; <<http://www.smh.com.au/environment/conservation/thousands-protest-at-manly-beach-over-wa-shark-cull-20140201-31tiy.html>>.