

NSW Threatened Species Scientific Committee

The Hon. Gabrielle Upton, MP
Minister for the Environment, Minister for Local Government
and Minister for Heritage
GPO Box 5341
SYDNEY NSW 2001

Dear Minister,

One of the Key threatening processes listed under the *Biodiversity Conservation Act 2016* is the "Death or injury to marine species following capture in shark control programs on ocean beaches." A similar Key threatening process (KTP) relating to the shark meshing program in NSW is also listed as a KTP under the *Fisheries Management Act 1994*.

The NSW Shark Meshing (Bather Protection) Program Joint Management Agreement (JMA) is an agreement between the Department of Primary Industries and the Office of Environment and Heritage which aims to minimise the impact of shark meshing on marine mammals, birds and reptiles. Under section 2.25 of the *Biodiversity Conservation Regulation Act 2017* (BC Regulation), the NSW Threatened Species Scientific Committee (NSW TSSC) must conduct an annual review of the performance of all parties to a Joint Management Agreement (JMA) and advise the Minister of any deficiencies in the implementation of the JMA by any party. The NSW TSSC must also provide its advice to the Environment Agency Head so that it can be included in an annual report or be made available for public inspection.

The NSW TSSC has reviewed the Shark Meshing (Bather Protection) Program (SMP) 2017-2018 Annual Performance Report. The TSSC notes that a key change to the JMA was a reduction in the number of target species from 12 to three (White Shark, Bull Shark and Tiger Shark). A total of 9 shark attacks were reported and investigated in NSW waters during the 2017/18 financial year.

With mortalities of threatened and protected non-target species again reported, the NSW TSSC maintains its concern about the impact the SMP has on protected and threatened marine species in NSW. The NSW TSSC notes a total of 403 marine animals were caught in the SMP during the 2017/18 meshing season, comprised of 34 target sharks and 369 non-target animals. Of concern is that 369 interactions with non-target animals were recorded and this represents 92 % of interactions, which is a substantial increase from 75% recorded in 2016/17. Moreover, 60 (15%) of the interactions were with threatened species. We also note that total interactions (403) is slightly greater than that reported in 2016/17 (373), but considerably lower than the 749 reported for 2015-2016 report.

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The NSW TSSC is pleased to see reports of increased use of aerial surveillance documented in the report, including both helicopter surveys and use of drones. There is also an ongoing effort to improve public awareness through the release of updated versions of a SharkSmart app. The NSW TSSC is also pleased to see the results of research undertaken using the DNA samples taken as part of the SMP. The library of DNA samples is a valuable resource and the current report refers to the world's first population assessment for White Sharks using close-kin genetics was published in collaboration with CSIRO (Hillary et al., 2018). Genetic relatedness reveals total population size of White Sharks in eastern Australia and New Zealand. *Scientific Reports* (2018) 8: 2661. Doi:10.1038/s41598-018-20593-w) as well as similar studies on Smooth Hammerhead Sharks and Dusky Whaler Sharks.

Observers were present for 44% of all net inspections by contractors during the 2017/18 season, a 30% increase on coverage during the 2016/17 season. NSW TSSC was pleased to see an even spread of observers between different regions.

The trigger point for the objective of '*minimising the impact on non-target species and threatened species*' was tripped in 2017/18 for Grey Nurse Sharks, Great Hammerheads, and Hawksbill Turtles. The 20 grey nurse shark caught in 2017-18 is maintaining the recent trend of higher than previous captures. It is stated that the trigger point review report for non-target and threatened species needs to be prepared by DPI within six (6) months of this Annual Performance Report. The trigger point review from 2016/17 was not included in this report.

As stated previously by the NSW Scientific Committee (replaced by the NSW TSSC in 2017), trigger points should be sensitive to the population parameters of particular species. However, as they are currently set, trigger points are too coarse to initiate an effective change in management for species with declining or recovering populations. In addition, trigger points currently take no account of the different threat categories in which a species is listed. More sensitive trigger points should be set for species listed as Endangered or Critically Endangered, where life history traits (e.g. late maturation, low fecundity, small population size) and low population numbers already predispose species to significant impacts from anthropogenic sources of mortality. The NSW TSSC therefore once again urges a review of the scientific basis for setting trigger points, taking into account population size, demographic structure, breeding biology and the cumulative effect of other anthropogenic sources of mortality affecting each non-target and threatened species that interacts with the SMP.

While the NSW TSSC understands its statutory responsibilities pertain to marine mammals and reptiles (as listed under the *Biodiversity Conservation Act 2016*), we remain concerned about the impacts of the shark meshing program on species listed under the *Fisheries Management Act 1994*, in particular the Critically Endangered grey nurse shark (*Carcharias taurus*). The NSW TSSC will continue to raise its concern regarding the SMP in order to assist in improving the operation of the Program in relation to mitigating impacts on nontarget marine species.

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Finally, the NSW TSSC wishes to again stress the importance of evidence-based criteria in the SMP. Scientific evidence continues to be required to determine the effectiveness of the whale and dolphin acoustic pingers attached to the nets, the assessment of shark abundance or aggregation at netted vs un-netted beaches, and the fate of different species under the 'released alive' category. The NSW TSSC also encourages further research and tests of the effectiveness of alternative technology, such as the SMART drumlines being trialled on the NSW north coast. The NSW TSSC supports trials of this technology within the SMP region to test their efficacy in relation to the nets currently used in this region.

A similar letter has also been sent to the Anthony Lean, Chief Executive, Office of Environment and Heritage.

Yours sincerely



Dr Marco Duretto
Chairperson
NSW Threatened Species Scientific Committee