NSW Threatened Species Scientific Committee

Response to the Shark Meshing (Bather Protection) Program 2023/2024 Annual Performance Report

We are writing in regard to the NSW Shark Meshing Program (SMP) and the Joint Management Agreement (JMA) on the SMP.

One of our duties of the NSW Threatened Species Scientific Committee (TSSC) under the *Biodiversity Conservation Regulation 2017* is to conduct an annual review of the performance of all parties to the JMA. While we have focused on the annual report of the JMA in past years, the TSSC considers that the continued poor outcomes of the annual shark meshing program reflect a wider state government failing for biodiversity conservation in NSW. Given that both the NSW Department of Primary Industries and Regional Development (DPIRD) and the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) are signatories to this agreement, the failings clearly lie in the poorly coordinated effort to manage a range of threatened marine species. We restrict our points to those animals listed under the *Biodiversity Conservation Act 2016* but such points are clearly applicable to all threatened species, including those listed under the *Fisheries Management Act 1994*.

Non-target losses.

We note a continued large number of non-target species killed and we have serious concerns that even those released alive have diminished survival capacity. At present this serious threat to listed marine animals caught in the nets is being inadequately monitored by NSW DPIRD with a strategic view to reducing impact. We are still concerned that the current trigger points lack scientific rigour and are thus, at best, arbitrary in their effectiveness. The slow response of NSW DPIRD to these triggers is a key issue in increasing the risk of extinction.

Catch records (NSW DPIRD 2024) indicate that 255 animals were reported entangled in the nets during the period from 1 September 2023 to 30 April 2024 and that 240 (94%) were non-target animals. Sixty-five of those 255 interactions were with threatened or protected species, including:

• 14 Greynurse Sharks (6 dead, 8 released alive) • 13 Green Turtles (8 dead, 5 released alive) • 12 White Sharks (2 dead, 10 released alive) • 11 Leatherback Turtles (5 dead, 6 released alive) • 5 Indo-Pacific Bottlenose Dolphins (4 dead, 1 released alive) • 3 Loggerhead Turtles (2 dead, 1 released alive) • 3 Great Hammerhead Sharks (dead) • 1 Common Dolphin (dead) • 1 Humpback Whale (released alive) • 1 Olive Ridley Turtle (released alive) • 1 Hawksbill Turtle (dead)

Only 36% of the animals caught in the nets were released alive.

Justification for using shark meshing to reduce human fatalities.

The overall objective of the shark mesh program is to reduce human fatalities from key target sharks on beaches. At present there is no evidence that such actions do decrease fatalities. Huveneers *et al.* (2024) investigated the history of unprovoked shark attacks finding that attacks moved from largely attacks on swimmers to attacks on surfers. The number of shark bites per year was more than 5 times higher between 2000 and 2022 than between 1900 and 2000, but this metric does not account for increases in the numbers of beach users, reporting rates or beach-use changes over the time period. Critically though, in the area where nets are deployed, they could not detect differences between netted and non-netted beaches in attacks. “Results highlight that area-based protection alone is insufficient to reduce shark-human interactions” (Huveneers *et al.* 2024).

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Have the parties of the JMA met the objectives of protecting threatened species?

The objectives of the JMA are to "Minimise the impact of Shark Meshing on Marine Mammals, Marine Reptiles, Marine Birds, Fish and Marine Vegetation that are a Threatened Species, Population or Ecological Community or are Protected Fauna or Protected Fish", and to "Ensure that Shark Meshing does not jeopardise the survival or conservation status of Threatened Species, Populations or Ecological Communities, or cause species that are not threatened to become threatened". We note there have been some attempts to reduce the impact of shark meshing but we are concerned that there have been no overall strategic measures implemented that ensures the reduction in impact. Part of this issue is that there is little understanding of current population sizes, movements and key life history knowledge about the dolphins, whales, seals, turtles and other sea reptiles using the waters in NSW. In order to show, with reasonable certainty, that the beach netting DOES NOT increase the risk of extinction of these threatened species, the biology and landscape movements of the animals in the waters needs to be better understood. With limited research or monitoring to understand these species the impact is difficult to quantify. NSW DPIRD should be reducing the impact of netting in a measurable manner, NSW DCCEEW should be monitoring population numbers to inform ongoing reduction of impacts from netting and building understanding to facilitate the overall conservation of these listed species. Joint ownership of the problem appears to have resulted in no government agency taking the lead and therefore poor conservation outcomes for the marine species.

This is especially pertinent as 'Death or injury to marine species following capture in shark control programs on ocean beaches' has been listed as a Key Threatening Process since 2003 but remains without a key threatening process strategy.

We note the recent change in the shark meshing program to reduce the time the nets are out to reduce the impact on marine turtles. We also note that there is no monitoring of populations by any state jurisdiction. Given that the NSW government is a party of the Commonwealth Recovery Plan for Marine Turtles in Australia 2017-2027, the lack of serious knowledge gathering and monitoring seems completely at odds with Objective 3: *Anthropogenic threats are demonstrably minimised* and with Objective 4: *Trends in nesting numbers at index beaches and population demographics at important foraging grounds are described*. To date, we see no strategic management and planning backed by good scientific information.

Overall we question whether the key objectives of the JMA to '*Minimise the impact of Shark Meshing on Marine Mammals, Marine Reptiles, Marine Birds, Fish and Marine Vegetation that are a Threatened Species, Population or Ecological Community or are Protected Fauna or Protected Fish;* and *6.1.2 Ensure that Shark Meshing does not jeopardise the survival or conservation status of Threatened Species, Populations or Ecological Communities, or cause species that are not threatened to become threatened'* have been considered seriously since the JMA was signed. We find no evidence that the progress towards reduced impact on threatened species has been the focus of any research and monitoring program. Beach netting is a very serious anthropogenically created threat. The TSSC does not consider that the JMA has achieved its goals and we see no evidence that parties are seeking a long-term reduction in the contribution of shark meshing to the risk of extinction for marine threatened species.

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References.

Huveneers, C., C. Blount, C.J.A. Bradshaw, P.A. Butcher, M.P. Lincoln Smith, W.G. Macbeth, D.P. McPhee, N. Molschaniwskyj, V.M. Peddemors, M. Green. 202. Shifts in the incidence of shark bites and efficacy of beach-focussed mitigation in Australia. Marine Pollution Bulletin 198: 115855. https://doi.org/10.1016/j.marpolbul.2023.115855.

NSW DPIR&D (2024). NSW Department of Primary Industries and Regional Development

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Prepared in accordance with the 2017 Joint Management Agreement and associated 2023 Management Plan