



Environmental Protection Authority

Environmental offsets reporting form

See *EPA Guidance Statement No. 19: environmental offsets - biodiversity*

Please note that the EPA may request additional information.

Section A: Administrative information

1. Proposal or scheme name: Western Australian Shark Hazard Mitigation Drum Line Program 2014-17

2. Summary of proposal or scheme: The Western Australian Government is proposing to:

- a) Set up to 60 static baited drum lines at approximately 1km offshore of selected high use swimming beaches and surf breaks within designated Marine Monitored Areas (MMAs) in the metropolitan and south west coastal regions of Western Australia. The metropolitan MMA extends from Ocean Reef (-31 °44.6038', 115 °43.3727') to Port Beach (-32 °2.4354', 115 °44.4630') and the south west MMA extends from Quindalup (-33 °37.8569', 115 °8.9470') to Prevelly (-33 °58.9200', 114 °59.3834'). The static drum lines will be deployed between 15 November and 30 April for a period of three years, commencing 15 November 2014 and ceasing 30 April 2017. Target species will be any white shark (*Carcharodon carcharias*), tiger shark (*Galeocerdo cuvier*) or bull shark (*Carcharhinus leucas*) with a total length of three metres or greater. Drum lines will be monitored between 6am and 6pm, seven days a week.
- b) Deploy temporary drum lines in response to an identified shark threat or incident. Temporary drum lines may be set anywhere in Western Australian waters at any time throughout the year until 30 April 2017.

Section B: Type of environmental asset (s) – State whether Critical or High Value, describe the environmental values and attributes

White shark

- Protected under the Fish Resources Management Act 1994 (FRMA);
- Protected under the Wildlife Conservation Act 1950 (WC Act) (wholly protected fauna), declared to be in special need of protection under s 14(4) and without proper authority a person capturing or killing a white shark commits an offence under ss 16(1) and 17(2) of the WC Act.
- Listed as Vulnerable under s 178 and migratory under s 209 of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Tiger shark

- Protected under the FRMA (all whaler species with an interdorsal measurement greater than 70cm)

Bull shark

- Protected under the FRMA (all whaler species with an interdorsal measurement greater than 70cm)

Grey nurse shark

- Listed as Vulnerable under s 178 of the (EPBC Act).

In addition to those listed above, 14 seabirds, four marine mammals, four marine turtles and the whale shark are listed as threatened species, and 16 seabirds, four marine mammals, four turtles and 15 marine species are listed as migratory under the EPBC Act which may be present in the MMAs as extracted from the EPBC Act Protected Matters database.



Section C: Significant impacts (describe the significant adverse environmental impacts related to the proposal or scheme before mitigation measures are applied)

In developing the Proposal, the Government gave consideration to the possibility of:

1. deploying drum lines through the winter months (May to October) when surfers are still active water users;
2. deploying a larger number of drum lines;
3. deploying drum lines across a larger spatial scale, at more beaches and surf breaks along the 12.895 km Western Australian coastline;
4. deploying a net meshing system similar to those used in shark control programs in other jurisdictions;
5. using a smaller, more commercially accessible and cost efficient hook;
6. targeting sharks ≥ 200 cm total length;
7. requiring contractors to monitor drum lines every other day and for fewer hours each day; and
8. submitting a proposal for an ad infinitum lethal shark control program.

It is considered that, while not directly quantifiable, implementing even just one of the above mentioned considerations would lead to a significant increase in adverse environmental impacts on target and non-target species.

Section D: Mitigation measures (describe all measures to Avoid, Minimise, Rectify and Reduce)

Avoid

- No deployment of drum lines between May and October when the whale migrations occur off the Western Australian coastline, and when white sharks are more prevalent.
- No use of nets, avoiding a lower selective fishing method and thereby reducing potential for bycatch.

Minimise

- Use of a large (no smaller than an approximate 25/0 circle) hook to target large sharks and minimise the potential for interactions with non-target species. Drum lines only deployed during high use months i.e. November to April (limited temporal scale) for a period of three years.
- A maximum of 60 static drum lines deployed off of select swimming beaches and surf breaks (limited spatial scale), set along a maximum distance of 87km of the 12 895km Western Australian coastline(<1%).
- Distance below the water at which the hooks are set (minimum of two metres below the surface of the water) will reduce the potential for interactions with sea birds.
- Monitoring of drum lines for up to twelve hours per day, seven days per week, increasing the survival rate of non-target animals released from the lines.
- A preference for shark as bait to deter other marine animals, including turtles and dolphins.

Rectify

- Research into white shark populations/aggregations areas
- Research into non-lethal shark detection and deterrent methods



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Reduce

- Training in animal handling to reduce stress placed on animals.
- Observer trips to be undertaken on each vessel to ensure compliance with contract, permit and legislative requirements and conditions.
- Access to a team of experts with extensive experience in the disentanglement of, and best practice handling techniques, of marine animals at the Department of Parks and Wildlife
- Minimum standards of operation required through tender process to ensure adequate and suitable vessels, relevant experience and skills in marine animal handling and relevant firearms licences and experience.

Section E: Significant residual impacts (describe all the significant adverse residual impacts that remain after all mitigation attempts have been exhausted)

The Government believes that by following the mitigation measures outlines in Section D there will be no significant remaining residual impacts.

- For white sharks it is expected that fewer than 10 white sharks and even fewer in the target range (≥ 300 cm TL) will be caught each year. This would lead to a likely cumulative catch of less than 25 white sharks over the three year program and even fewer that are ≥ 300 cm TL. This is substantially lower than the numbers that were estimated to have previously been caught each year as bycatch by commercial fishing operations in South Australia and Western Australia. Prior to the major reductions in effort of these fisheries that occurred in the mid-1990s up to 260 individuals per year were estimated to be captured across the Western Australian, South Australian and Victorian region. The annual bycatch of white sharks by all fisheries across this region is estimated to still be in the order of 50-100 individuals per year. Based on these estimates, the expected catch levels generated by the Proposal would only be increasing annual catch by less than 10%. The cumulative impact of the three year Proposal, assuming catch levels close to 10 individuals per year, therefore is assessed as posing only a negligible risk to the population.
- For grey nurse sharks the expected number of captures of this species as part of the Proposal; to be low, and that if caught, their biological characteristics should allow for a high chance of survival following release due to their ability to buccally ventilate and maintain neutral buoyancy. The risk to the stock is considered therefore to be negligible.
- The Proposal is expected to generate negligible impacts on each of the species which is also consistent with no trophic impacts being generated. The cumulative total for all captures of all species is very small (40 tonne per year) when compared to the total combined levels of commercial capture of sharks that previously occurred within this bioregion (> 500 tonne per year). The additional 40 tonne per year of sharks to be captured under the Proposal poses a negligible risk to the community structure of the Leeuwin-Naturaliste ecosystem.

Section F: Proposed offsets for each significant residual impact (identify direct and contributing offsets). Include a description of the land tenure and zoning / reservation status of the proposed offset site. Identify any encumbrances or other restrictions on the land that may impact the implementation of the proposed offset and provide evidence demonstrating how these issues have been resolved.



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As there will be no significant residual impacts, the Western Australian Government is not proposing any offsets as part of the Proposal.

Section G: Spatial data relating to offset site/s (see *EPA Guidance Statement No. 19: environmental offsets- biodiversity*, Appendix 4)

Not applicable.

Section H: Relevant data sources and evidence of consultation (consultation with agencies, relevant stakeholders, community and references to sources of data / information). Include details of specific environmental, technical or other relevant advice and information obtained to assist in the formulation of the offset.

Not applicable.