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5th Meeting of the Southern Indian Ocean Fisheries Agreement (SIOFA) Scientific
Committee

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Ecological risks of demersal fishing on deepwater chondrichthyan
populations in the Southern Indian and South Pacific oceans

Relates to agenda item: 7

Working paper Info paper

Delegation of Australia¹

Abstract

Risks to deepwater chondrichthyans (sharks, rays and chimaeras) from fishing are poorly understood, particularly in areas beyond national jurisdiction. We adapted Productivity-Susceptibility Analysis (PSA) and Sustainability Assessment for Fishing Effects (SAFE) to assess the vulnerability of 173 deepwater chondrichthyans to various demersal fishing gears in the Southern Indian and South Pacific oceans. Several species were categorised as being at high or extreme vulnerability, including some deepwater shark species in the Southern Indian Ocean that are reported to be commercially targeted. There was good concurrence between PSA and SAFE results for species categorised as being at high or extreme vulnerability by the SAFE, but as expected there was an overall greater number assessed to be at higher vulnerability using PSA due to its precautionary nature. Our results indicate probable misclassifications in the PSA relative vulnerability rankings, highlighting the value of applying more quantitative tools, such as SAFE, when adequate data is available. Our findings indicate that better catch, effort and biological information is needed to inform assessment and management of deepwater chondrichthyans. If targeted fishing of deepwater shark species continues in the Southern Indian Ocean, improved assessments and estimates of sustainable yields are urgently required to mitigate risk of overexploitation.

PLEASE NOTE that the paper at Attachment 1 has been accepted for publication in the *ICES Journal of Marine Science*. The preprint provided at Attachment 1 is a restricted and confidential document and under no circumstances is it to be distributed, copied or quoted without the express written consent of the authors. The final published version may differ slightly to the version below.

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