

# Shark bite-off rates revealed at Ningaloo

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Credit: University of Western Australia

In a world first, researchers at The University of Western Australia have quantified the number of shark bite-offs of recreationally caught fish in the Ningaloo region.

Published in *Marine Ecology Progress Series*, in collaboration with the Department of Primary Industries and Regional Development, and funded by the Gorgon Barrow Island Net Conservation Benefits Fund and the Jock Clough Marine Foundation, the study Quantifying shark depredation in a recreational fishery in the Ningaloo Marine Park and Exmouth Gulf, Western Australia provides the first quantification of shark bite-offs in a recreational fishery.

There was variation in bite-off rates across the Ningaloo region, but on

average close to 40 per cent of the 400+ fishers interviewed had experienced a shark bite-off on their most recent fishing trip, with approximately 12 per cent of hooked fish being taken by [sharks](#).

Areas fished more frequently had higher shark bite-off rates, which was hypothesized to be due to a behavioural change where the sharks associate the presence of boats with the availability of hooked fish to feed on. Additionally, areas with high catches for recreational fishers may also be good feeding habitats for sharks so have higher concentrations of the predators which lead to higher numbers of interactions with hooked fish.

In addition, when a larger number of vessels fished in close proximity, the chances of shark bite-offs also increased.

Lead author and Ph.D. student Jonathan Mitchell from UWA said the study will act as a baseline, allowing researchers and fishery managers to identify changes over time and develop science-based mitigation strategies.

"This data is significant because it is the first to quantify the occurrence of shark bite-offs in a recreational fishery anywhere in the world, whereas previously only anecdotal reports existed," Mr Mitchell said.

"By identifying areas and depths at which bite-offs are more likely to occur, fishers can avoid these areas to immediately have a better chance of reducing bite-offs.

"Modifying fishing techniques by spending less time at each site and moving to a different location as soon as a fish is taken by sharks, may help to prevent sharks from learning to associate fishing activities with food and increase a fisher's chances of avoiding further bite-offs."

The findings are important to fishers and both marine park and fisheries managers as they identify the factors affecting shark bite-offs, which is a vital first step in developing science-based strategies to mitigate the impacts.

The researchers aim to expand this study by identifying the [shark species](#) involved and learning more about their behaviour to identify ways in which shark bite-offs can be reduced.

**More information:** JD Mitchell et al. Quantifying shark depredation in a recreational fishery in the Ningaloo Marine Park and Exmouth Gulf, Western Australia, *Marine Ecology Progress Series* (2017). [DOI: 10.3354/meps12412](#)

Provided by University of Western Australia

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