Critically endangered grey nurse shark mapped for the first time in landmark study

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A study mapping the eastern Australian grey nurse shark population has found it has declined rapidly over the last few decades, with only 400 breeding sharks left, too few to maintain a healthy population.

The findings reveal that additional protection measures are needed to halt further population declines of the critically endangered shark.

The number of breeding individuals remaining is not enough to maintain genetic health and reduces the ability of the population to survive future environmental changes.

Diving with grey nurse sharks is a popular attraction at locations along the east coast of Australia, but the declining population puts the industry's future in doubt.

The grey nurse shark suffered major declines from overfishing in the 60s and 70s because they were considered dangerous and are easy to kill, being relatively slow-moving and aggregating in regular areas. This resulted in controversial closures of fishing areas.

Despite designated protection areas, the study found that grey nurse sharks tend to disperse out of these areas and get caught as by-catch or sometimes killed by entanglement in the shark meshing program, as they travel between the safe zones.

Lead author of the study, Associate Professor Adam Stow from the

Department of Biological Sciences, said future conservation efforts need to mitigate threats outside of protected areas and consider the impact of recreational diving, fishing and the use of shark nets.

"Accidental capture of grey nurse sharks occurs outside the existing protected areas, and in addition to direct mortalities from capture and stress, many sharks are found tangled in fishing gear which can cause delayed fatality from punctured organs," said Associate Professor Stow.

"This is the first estimate of the effective population size, or the number of breeders in the population, and reveals an alarmingly low number of sharks left.

"Sharks are apex predators and play an important role in the food chain, meaning if they are removed, it can create 'cascade effects' resulting in imbalance and loss of other species."

Provided by Macquarie University

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