Sharks in Australia's Great Barrier Reef in decline

28 September 2011

This file illustration photo shows people watching a whale shark swimming in an aquarium. Sharks inhabiting Australia's Great Barrier Reef are in decline due to over fishing, researchers warned, after developing what they said was a new way to measure falling numbers.

Sharks inhabiting Australia's Great Barrier Reef are in decline due to over fishing, researchers warned, after developing what they said was a new way to measure falling numbers.

Academics from James Cook University in Queensland on Wednesday said there was mounting evidence of widespread and substantial declines in shark populations around the world, with some species now listed as threatened.

Professor Sean Connolly said assessing the numbers of sharks was difficult -- not least because many were caught accidentally while intending to catch other fish and some killed for their fins.

Using a new analytical approach, the researchers looked at the growth rates, reproductive capability and projected mortality rates of two Great Barrier Reef shark species -- the grey reef shark and the whitetip reef shark.

They then used statistical methods to arrive at long-term population predictions for both species.

To further check their results, they compared them with data on shark population in areas where fishing is legal, green zones in which boats are allowed but fishing banned, and pink zones in which boats are banned.

The researchers found that the results using all the various methods of assessing shark populations were in close agreement and that sharks were declining due to fishing.

"Shark declines are quite rapid," Connolly said.

"Our consensus estimates are around six percent per year decline for whitetip reef sharks and nine percent for grey reef sharks."

Given the range of uncertainty around the estimates, the decline could potentially be even greater, he added.

He said these figures were just for Australia, but in countries with fewer fishing restrictions the numbers were expected to be worse.

"Shark populations in other countries with significant coral reefs in our region are going to be in much worse shape even than ours are -- and ours are not in good shape," Connolly said.

The findings, published in science journal PLoS ONE, could help researchers with the potential recovery of these species if they were adequately protected, lead author Mizue Hisano said.

"More broadly, we believe that our study demonstrates that this approach may be applied to a broad range of exploited species for which direct estimates of mortality are ambiguous or lacking, leading to improved estimates of population growth," Hisano said.

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APA citation: Sharks in Australia's Great Barrier Reef in decline (2011, September 28) retrieved 27 November 2020 from https://phys.org/news/2011-09-sharks-australia-great-barrier-reef.html

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