

Sharks more vulnerable than originally thought

April 15 2019



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A study of small-scale fisheries operating from Kenya, Zanzibar and Madagascar, has revealed the massive underreporting of sharks and rays caught annually in the region.

Dominated by requiem, hammerhead, ground and hound sharks, the total annual catch of these vulnerable [species](#) equates to around 35,000 tonnes.

Led by experts at Newcastle University, UK, and published in the academic journal *Biological Conservation*, the team say the study highlights the substantial underreporting of catches by small scale fisheries and the urgent need to expand efforts globally to assess their impact on vulnerable species.

Impact of small-scale fisheries

Lead author Andrew Temple, a researcher in the School of Natural and Environmental Sciences at Newcastle University, said:

"Small scale fisheries account for 95 percent of fishers globally and around 35 percent of the total catch and yet despite this, they have received very little attention.

"The aim of the project was to start to understand the impact these small scale fisheries are having on the environment by recording a baseline of vulnerable megafauna, such as turtles, rays and sharks.

"And what we found was a huge discrepancy between the numbers being declared and the actual number being caught – in excess of 2.5 million individual sharks and rays annually.

"This study clearly shows the impact of small scale fisheries on coastal, oceanic and even deepwater species.

40 percent of catch world-wide is unintentional

Thousands of miles of nets and lines are set in the world's oceans each day and the unintentional capture of non-target species – often termed as bycatch – is unavoidable.

It is estimated about 40 percent of the catch worldwide is unintentionally caught, and includes vulnerable species such as dolphins, marine turtles, sharks and seabirds.

In large-scale commercial fishing the bycatch is wasted, thrown back into the sea dead or dying, but in small scale fisheries, such as those studied by the Newcastle team, the non-target species are generally retained and sold, in some cases illegally.

Monitoring fisheries in the South West Indian Ocean, the team monitored 21 landing sites across Kenya, Zanzibar and Madagascar over 12 months.

In total, they identified 59 non-target species, including three sea turtles and one Dugong dugon, commonly known as a sea cow and listed as a vulnerable species.

Sharks and rays were by far the most common by-product species, dominated by ground sharks (Carcharhiniformes), requiem sharks (Carcharhinidae), hammerhead (Sphyrnidae) and hound (Triakidae). Larger species were caught in smaller numbers, including a 6m whale shark and a female white shark.

Senior author Dr. Per Berggren, Head of the Marine Megafauna Lab at Newcastle University said:

"We looked at just one region of the world but it's likely that similar underreporting is happening in small scale fisheries globally – which means our 2,500,000 unreported sharks and rays only represent a small

portion of the total global catch.

"Reducing this figure is essential to protect life in the sea but also to safeguard the future sustainability of small [scale](#) fisheries and the communities whose livelihoods are dependent on them. This research is the first step towards doing that."

Professor Selina Stead, a co-author on the study and now Head of the Institute of Aquaculture at the University of Stirling, added:

"Sustainable shark [fisheries](#) can only happen if those who catch and manage them are engaged in achieving shared conservation goals.

"This new scientific evidence on the vulnerability of shark populations reinforces the need for effective polices and management to address their [health status](#) and highlights to governments that more action is needed to tackle Illegal, Unreported and Unregulated (IUU) fishing of [vulnerable species](#) like sharks."

More information: Andrew J. Temple et al. Marine megafauna catch in southwestern Indian Ocean small-scale fisheries from landings data, *Biological Conservation* (2018). [DOI: 10.1016/j.biocon.2018.12.024](https://doi.org/10.1016/j.biocon.2018.12.024)

Provided by Newcastle University

Citation: Sharks more vulnerable than originally thought (2019, April 15) retrieved 27 June 2024 from <https://phys.org/news/2019-04-sharks-vulnerable-thought.html>

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