# Study says sharks/rays globally overfished

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Wedgefish and Sawfish landings at Muara Angke, Jakarta, Indonesia. Species of these shark-like rays are highly valued for their fins and are listed as endangered and critically endangered by IUCN. Credit: Australian National Fish Collection, CSIRO.

(Phys.org) —One quarter of the world's cartilaginous fish, namely sharks and rays, face extinction within the next few decades, according to the first study to systematically and globally assess their fate.

The International Union for Conservation of Nature's (IUCN's) Shark Specialist Group (SSG), co-chaired by Nick Dulvy, a Simon Fraser University (SFU) Canada Research Chair in Marine Biodiversity and Conservation in British Columbia, conducted the study.

It was published in *eLife* journal today.

Previous studies have documented local overfishing of some populations of sharks and rays. But this is the first one to survey their status through out coastal seas and oceans. It reveals that one-quarter (249) of 1,041 known shark, ray and chimaera species globally fall under three threatened categories on the IUCN Red List.

"We now know that many species of sharks and rays, not just the charismatic white sharks, face extinction across the ice-free seas of the world," says Dulvy. "There are no real sanctuaries for sharks where they are safe from overfishing."

Over two decades, the authors applied the IUCN's Red List categories and criteria to the 1,041 species at 17 workshops involving more than 300 experts. They incorporated all available information on distribution, catch, abundance, population trends, habitat use, life histories, threats and conservation measures.

Sharks and rays are at substantially higher risk of extinction than many other animals and have the lowest percentage of species considered safe. Using the IUCN Red List, the authors classified 107 species of rays (including skates) and 74 species of sharks as threatened. Just 23 percent of species were labeled as being Least Concern.

The authors identified two main hotspots for shark and ray depletion—the Indo-Pacific (particularly the Gulf of Thailand), the Red Sea and the Mediterranean Sea.

"In the most peril are the largest species of rays and sharks, especially those living in relatively shallow water that is accessible to fisheries. The combined effects of overexploitation—especially for the lucrative shark fin soup market—and habit degradation are most severe for the 90 species found in freshwater.

"A whole bunch of wildly charismatic species is at risk. Rays, including the majestic manta and devil rays, are generally worse off than sharks. Unless binding commitments to protect these fish are made now, there is a real risk that our grandchildren won't see sharks and rays in the wild."

Losing these fish will be like losing whole chapters of our evolutionary history says Dulvy. "They are the only living representatives of the first lineage to have jaws, brains, placentas and the modern immune system of vertebrates."

The potential loss of the largest species is frightening for many reasons, says Dulvy. "The biggest species tend to have the greatest predatory role. The loss of top or apex predators cascades throughout marine ecosystems."

The IUCN SSG is calling on governments to safeguard sharks, rays and chimaeras through a variety of measures, including the following: prohibition on catching the most threatened species, science-based fisheries quotas, protection of key habitats and improved enforcement.

Provided by Simon Fraser University