

Arizona Daily Star

Report: Decline in predator fish alarming

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WASHINGTON - Over the past 100 years, two-thirds of the large predator fish in the ocean have been caught and consumed by humans, and in the decades ahead, the rest are likely to perish, too.

In their place, small fish such as sardines and anchovies are flourishing in the absence of the tuna, grouper and cod that feed on them, creating an ecological imbalance that experts say will forever change the oceans.

"Think of it like the Serengeti, with lions and the antelopes they feed on," said Willy Christensen, of University of British Columbia's Fisheries Centre. "When all the lions are gone, there will be antelopes everywhere. Our oceans are losing their lions and pretty soon will have nothing but antelopes."

This grim reckoning was presented at the American Association for the Advancement of Science's annual meeting Friday during a panel that asked the question: "2050: Will there be fish in the ocean?"

The panel predicted that while there would be fish decades from now, they will be primarily the smaller varieties currently used as fish oil, fish meal for farmed fish and only infrequently as fish for humans. People will have to develop a taste for anchovies, capelins and other smaller species, the experts said.

That the oceans are being overfished has been documented before, and the collapse of species such as cod and Atlantic salmon is also well-known.

The new research attempts to quantify the overall decline in larger fish, based on data from more than 200 ecological systems studied since 1880. Those results were then modeled across the globe.

One startling conclusion: More than 54 percent of the decrease in large predator fish has taken place over the past 40 years.

"It's a question of how many people are fishing, how they are fishing, and where they are fishing," Christensen said. A majority of the catch, and now of the decline, involves East Asia, which has witnessed dramatic overall economic growth.

In describing the likely explosion of small fish, Christensen's team differed with a 2006 report in the journal *Science* that warned of an ocean without fish for humans by midcentury.