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Earth running out of room to expand fisheries: Study

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A University of British Columbia study has suggested that the Earth has run out of room to expand fisheries.

In collaboration with the National Geographic Society, the study is the first to measure the spatial expansion of global fisheries.

It has revealed that fisheries expanded at a rate of one million sq. kilometres per year from the 1950s to the end of the 1970s. The rate of expansion more than tripled in the 1980s and early 1990s - to roughly the size of Brazil's Amazon rain forest every year.

Between 1950 and 2005, the spatial expansion of fisheries started from the coastal waters off the North Atlantic and Northwest Pacific, reached into the high seas and southward into the Southern Hemisphere at a rate of almost one-degree latitude per year.

It was accompanied by a nearly five-fold increase in catch, from 19 million tonnes in 1950, to a peak of 90 million tonnes in the late 1980s, and dropping to 87 million tonnes in 2005, according to the study.

"The decline of spatial expansion since the mid-1990s is not a reflection of successful conservation efforts but rather an indication that we've simply run out of room to expand fisheries," said Wilf Swartz, lead author of the study.

Meanwhile, less than 0.1% of the world's oceans are designated as marine reserves that are closed to fishing.

"If people in Japan, Europe, and North America find themselves wondering how the markets are still filled with seafood, it's in part because spatial expansion and trade makes up for overfishing and 'fishing down the food chain' in local waters," said Swartz.

"While many people still view fisheries as a romantic, localized activity pursued by rugged individuals, the reality is that for decades now, numerous fisheries are corporate operations that take a mostly no-fish-left-behind approach to our oceans until there's nowhere left to go," said Daniel Pauly, co-author and principal investigator of the Sea Around Us Project at UBC Fisheries Centre.

The researchers used a newly created measurement for the ecological footprint of fisheries that allows them to determine the combined impact of all marine fisheries and their rate of expansion. Known as SeafoodPrint, it quantifies the amount of "primary production" - the microscopic organisms and plants at the bottom of the marine food chain - required to produce any given amount of fish.

"The era of great expansion has come to an end, and maintaining the current supply of wild fish sustainably is not possible," said Enric Sala, co-author of the study.

The study was published in the online journal *PLoS ONE*.

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