

## Industrial fishing fleets traveling farther to reel in fewer fish

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- *According to a recent study in the journal [Science Advances](#), the average distance industrial fishing fleets travel from their home ports to fishing grounds is twice what it was in the 1950s, expanding the total area of the world's oceans that are fished from 60 to 90 percent.*
- *Despite ranging farther afield and fishing in new waters, however, the fleets of the top 20 fishing countries — collectively responsible for 80 percent of the global industrial fishing catch — are hauling in far smaller amounts of fish.*
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Industrial fishing fleets are traveling ever-farther across the globe in pursuit of a dwindling haul of fish, a new study finds.

Researchers with Sea Around Us, a research initiative spearheaded by the University of Western Australia (UWA) and the University of British Columbia (UBC) in Canada, produced high-resolution maps of fish catches between 1950 and 2014 in order to examine the geographic expansion of industrial fishing. Their results were detailed in the journal [Science Advances](#) last week.

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Despite ranging farther afield and fishing in new waters, however, the fleets of the top 20 fishing countries — collectively responsible for 80 percent of the global industrial fishing catch — are hauling in far smaller amounts of fish. Today, about 7 metric tons of fish are caught per 1,000 kilometers (about 621 miles) traveled by those 20 countries' fleets, less than a third of the more than 25 metric tons they caught per 1,000 kilometers traveled in the 1950s.

Noting that global industrial fishing hit "peak catch" in 1996 and has continually declined in productivity since then, the researchers write in the study that the world's industrial fishing fleets might be in danger of running aground on a hard barrier to meeting future demand: "The trends in the spatial expansion of industrial fisheries and their overall catch together indicate that we may be approaching the physical limits of expansion in capture fisheries."

They add: "By our measure, total industrial catch per unit ocean area has declined by 22% since 1996, despite spatial expansion having continued, albeit slowly. Further expansion into the remaining accessible areas of the polar seas, even if it were ecologically justifiable, seems unlikely to reverse this trend."

David Tickler, a postgraduate student at UWA's School of Biological Sciences and lead author of the study, said in a statement that "These findings show that nowadays more fuel is being burned and more time is being spent at sea for every fish caught. These diminishing returns to fishing effort are a worrying indicator of the inability of fisheries to sustainably meet consumer demands and previous catch levels."

By mapping the expansion of industrial fisheries, the researchers determined that the doubling of the average distance fleets are fishing from their home port was almost entirely due to the government-subsidized fleets of a small number of countries. "While most countries continue to focus their fishing efforts on local waters, Taiwan, South Korea, Spain, and China have aggressively subsidized vessel and fuel costs to encourage their fleets to operate thousands of kilometres from their home ports," Tickler said.

Without these subsidies, Tickler and team write in the study, the profits reaped by the major distant-water fishing countries "would be greatly reduced, or even disappear completely." The researchers argue that their findings show that paying subsidies to industrial fishing fleets encourages inefficient and unsustainable uses of fisheries.

The former Soviet Union and Japan also had large fleets fishing in distant waters during the study period, but those fleets have scaled back their geographic range and are currently focused more on local fisheries. The fleets of 11 of the 20 largest industrial fishing countries, meanwhile, experienced little to no geographical expansion of their operations since 1950.

The researchers discovered that expansion of industrial fishing was most prominent in the coastal and archipelagic waters of Africa, South America, Southeast Asia, and the South Asian subcontinent. And while most fishing is done on continental shelf waters, the exploitation of offshore and high seas waters have also increased over the past 65 years, they found.

“Essentially no waters other than those at the polar extremes are presently unfished to some degree,” co-author Daniel Pauly, principal investigator of the Sea Around Us initiative at UBC, said in a statement. “But this continued expansion and concurrent intensification of fishing efforts has only contributed to the depletion of new areas of the ocean.”

Study co-author Jessica Meeuwig, who leads UWA’s Marine Futures Lab, says that the solution is to rein in the world’s industrial fishing fleets: “We have to accept that for fisheries to continue to support humanity into the future, we are going to have to allow the oceans some space and time to recover from over a century of unfettered industrial fishing.”



Commercial crab fishing vessel. Photo via [Wikimedia Commons](#), licensed under [CC BY-SA 2.5](#).

## CITATION

• Tickler, D., Meeuwig, J. J., Palomares, M. L., Pauly, D., & Zeller, D. (2018). Far from home: Distance patterns of global fishing fleets. *Science Advances*, 4(8), eaar3279. [doi:10.1126/sciadv.aar3279](https://doi.org/10.1126/sciadv.aar3279)

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