



MAPS REVEAL FISHING'S IMPRINT

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UNITED NATIONS: Humans are now fishing at least 55 per cent of the world's oceans - an area four times larger than the area occupied by humanity's onshore agriculture.

That startling statistic is among the findings of a unique, high-tech collaboration that is providing a massive amount of new data about global fishing operations.

The results, published yesterday in the journal *Science*, offer a powerful glimpse of the problem of overfishing on the hard-to-regulate high seas.

According to the Food and Agriculture Organisation (FAO) of the United Nations, 31.4 per cent of global fish stocks were overfished or fished unsustainably as of 2013, while another 58.1 per cent were "fully fished."

Yesterday's findings relied on data from Global Fishing Watch, a collaboration encompassing Oceana, SkyTruth and Google. Researchers compiled billions of data points from tracking systems that the International Maritime Organisation requires for roughly 70,000 fishing vessels.

The result is a picture of fishing that the study, led by David Kroodsma of Global Fishing Watch, claims "has never been directly quantified". Due to data limitations, the percentage of the oceans fished could actually be as high as 73 per cent, the study said.

"Fishing is happening almost everywhere and all the time," said Jackie Savitz, chief policy officer for the advocacy group Oceana. "I think people don't really have a sense of how heavily fished our oceans are and how intensely they are fished."

She said the intensity of global fishing documented by the study was far greater than researchers had been able to track in the past.

"That means we're putting more pressure on fish populations," Savitz said, noting that increased fishing also meant more inadvertent catching of other species, such as sea turtles. "That means there's more pressure on our oceans than we thought."

There was particularly intense fishing off the southeastern coast of South America, the eastern coast of China, western Africa, and all around Europe and the Mediterranean, the research found. The North Atlantic, far northeastern Pacific, Indian Ocean and Southern Ocean were far more devoid of fishing.

While yesterday's study doesn't delve into what areas are being overfished around the world, Savitz said experts had long documented overfishing in many places. But she said the latest data helped to illustrate that "the tragedy of the commons is very much at place in the oceans", and underscored the need for a more thoughtful global approach to regulating fisheries.

"What we need to do is, both within countries and internationally, put in place sustainable fishery management policies," Savitz said.

The study found that ships from just five nations - Spain, Taiwan, Japan, North Korea and China - accounted for more than 85 per cent of global fishing. China's fishing footprint was by far the largest, however, based on data for 2016. (The study used data from 2012 through 2016.)

One leading fisheries scientist said that while the study's methodology was novel, overall it reaffirmed an existing picture of how much the oceans were being fished.

"The results are remarkably consistent with the catch data that have been traditionally employed to measure fishing effort," said Jeremy Jackson, a marine sciences expert at the Scripps Institution of Oceanography.

"Ditto the fact that China, Spain, Taiwan, Japan and South Korea take 85 per cent of it all on the high seas. Still, it's good to see the strong confirmation, and of course it's unsustainable without massive restrictions in effort."

Daniel Pauly, a prominent expert on global fisheries and a professor at the University of British Columbia, added that yesterday's study "adds a new dimension to the scientists' and fisheries manager's tool kit, a very effective one".

"It can be seen as one of the first instances of high-tech being turned against illegal fishing (until now, it was the pirates who used it)," he wrote from Hong Kong. "What is new is that the [Global Fishing Watch] enables civil society to use satellites to monitor the activity of fishing vessels, and thus to fight against illegal fishing and to increase transparency."

In addition, he said the data helped to make a case that all fishing vessels - not only the large commercial ones operating far offshore - should be satellite-monitored.

"The next thing is thus to pressure the International Maritime Organisation to close the loophole they have for smaller, coastal fishing vessels, which do not need to have [electronic tracking systems]."

The technology used by Global Fishing Watch to conduct the study relies on public broadcast data from the Automatic Identification System (AIS), which uses satellite and land-based receivers to track the movement of ships over time.

Not all fishing vessels willingly broadcast their location, of course - particularly those intent on breaking the law - and vessels can switch off their trackers, potentially hindering the usefulness of the technology.

But the United States and other countries already require vessels of a certain size to use the locator system, partly as a safety measure to avoid collisions at sea. Global Fishing Watch allows users to access that information to track specific vessels over time.

The new satellite technologies are one part of a broader, ongoing international push to reduce overfishing in the oceans and cut back on illegal fishing. One 2014 study found that between 20 and 32 per cent of the fish imported by the US was caught illegally.

- Washington Post

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