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Race to the Bottom: Impact of Deep-Sea Fishing Severely Underestimated

Scientists recalculated historical catch data to find that bottom trawlers that scrape the seafloor with huge nets may be killing far more fish – and destroying more habitats – than previously thought.

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April 16, 2018READ TIME
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Fish seized in 2007 at the port of Abidjan, Côte d'Ivoire, from two Chinese ships that were intercepted bottom trawling, disregarding national fishing laws. [BANDOO SIAUPE/Getty Images](#)

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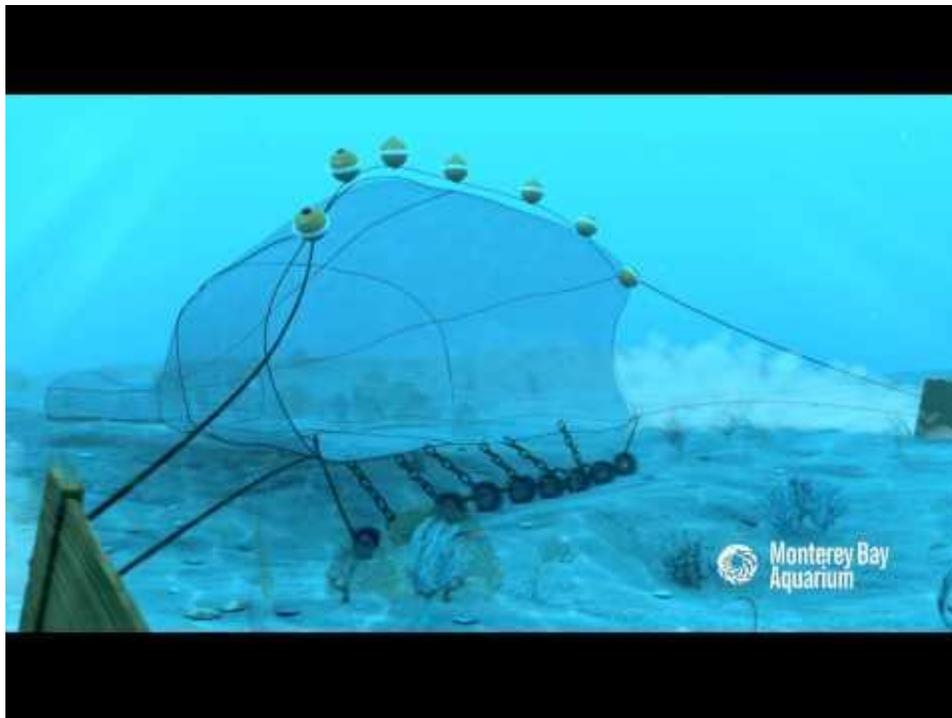
BY DRAGGING HEAVY nets across the seafloor, bottom trawling has long been regarded as among the most indiscriminate and destructive of fishing methods. Now new research shows that fishery managers may have grossly underestimated the global impacts of trawling for decades.

A team of scientists from institutions around the world studied global catch data for a 65-year period beginning in 1950. They concluded that deep-sea trawling – an especially lethal fishing technique that deploys industrial-scale gear at depths greater than 400m (1,300ft) – caught and killed nearly 80 percent more fish than experts had previously estimated. Their analysis shows that the fishery may have taken 25 million tons of marine life – especially species such as Greenland halibut, Longfin codling, grenadiers and orange roughy – whereas the United Nations Food and Agriculture Organization (FAO) recorded only 14 million tons.

“We would expect this fishery to be very impactful, but to find that landings were almost 50 percent unreported – that was very surprising,” said [Deng Palomares](#), a senior scientist at the University of British Columbia who collaborated on the research.

Lissette Victorero, a PhD student at the National Oceanography Centre in the United Kingdom, led the study, which was published on Wednesday in the journal Frontiers in Marine Science. She and her coauthors looked at a recently updated inventory of catch data that includes both catches reported to the FAO and estimated unreported catches – a category widely dismissed by official record keepers.

The unreported catches came from a project called the Sea Around Us, which has spent years retroactively correcting the historical catch record. Scientists with Sea Around Us have found that much more fish has been caught since 1950 than has been officially reported. The project has been both criticized as recklessly speculative and commended as a direly needed correction to existing fishery data banks.



(Monterey Bay Aquarium)

For the bottom-trawling project, the researchers created a comprehensive list of species primarily caught by deep-sea fishing, intentionally or as bycatch. Then they tallied up the tonnage of catches for those species from FAO data, and they did the same from the earlier Sea Around Us research that

reconstructed global fishing catches to account for unreported catches. That gave the researchers the total amount caught during the study period, showing that deep-sea trawling has been much more destructive than previously believed.

Part of the reason deep-sea trawling apparently has such a large unreported element is that a great deal of the total catch is thrown back into the ocean as unwanted – and usually dead – bycatch, a category that the FAO generally doesn't track. The Sea Around Us project, however, has produced estimates for historical bycatch. Using this data, Victorero and her colleagues found that of the 10.5 million metric tons of unreported catch from deep-sea trawlers, 5 million tons may have been discarded.

Deep-water species tend to grow slowly, live a long time and have low reproduction rates, all of which make them especially vulnerable to overfishing, Victorero said.

“And these fisheries aren't just depleting the populations – they also destroy their habitat,” she said.

Extensive research has shown that deep-sea trawling devastates habitats such as fragile deep-water corals. Many deep-ocean species congregate on underwater mountains called seamounts, which have become targets of focused and repeated fishing, magnifying the damage that occurs there. There is evidence, published in 2014 in the journal Proceedings of the Royal Society B, that deep-sea marine species provide a buffer against climate change. They do that by ingesting and sequestering large amounts of carbon – the equivalent of perhaps a million metric tons of carbon dioxide per year in U.K. waters alone – that might otherwise acidify the ocean or trap heat in the atmosphere.

Matthew Gianni, the cofounder and political and policy adviser for the Deep Sea Conservation Coalition in the Netherlands, is not surprised by the new research. He said systems for tracking deep-sea trawl catches, especially in international waters, have long been inadequate and, to some degree, they remain unreliable.

“Even today, in many high seas deep-sea fisheries there are limited requirements to report the bycatch of deep-sea species and there is very little, if any, reporting on how much of the bycatch is thrown over the side, back into the water,” he said in an email from Tokyo, where he was attending a meeting of the North Pacific Fisheries Commission. He noted that bycatch is virtually always dead, and added, “To the extent the bycatch is reported, it is only when the vessel ‘lands’ the fish.”



Hawksbill sea turtles are among the endangered species incidentally killed by bottom trawling. (Andrey Nekrasov /Barcroft Images/Barcroft Media via Getty Images)

Gianni, once a commercial fisher who spent several years working on a deep-water trawler out of San Francisco, founded his organization in 2004 with the objective of ending deep-sea trawling, and he said he hopes Victorero’s new research will lend yet more weight to the cause.

“If countries take their international political commitments and legal obligations seriously, then I would expect there to be little,

if any, deep-sea trawling permitted 10–15 years from now,” Gianni said. He cites a United Nations fisheries convention that requires that member states minimize bycatch and waste and “apply the precautionary approach” to developing fisheries, meaning that they should not proceed if insufficient data exists about a prospective fishery’s environmental impact.

That means much deep-sea trawling may be technically illegal. While many areas of the ocean have been closed to the activity, Gianni said a “lack of political will” may allow deep-sea trawling to continue elsewhere for years.

In fact, many nations not only allow deep-sea trawling but actually encourage it. Research has shown that much deep-sea trawling activity is heavily subsidized. Without fuel subsidies and other support, many of these fisheries that operate thousands of miles from their home ports would likely go belly up.

In their paper, Victorero and her colleagues found that deep-sea trawl catches amount to less than half a percent of total catches – overall a minute contribution to global fishing economies. Yet these relatively small catches are disproportionately devastating to targeted, as well as untargeted, species and the seafloor habitat they occupy.

“It shows that these species basically just can’t take any exploitation,” Victorero said. “Fishing for them just isn’t sustainable, and we end up destroying ecosystems for a very small amount of fish. It’s a very minor amount of money for a few nations, and taxpayers are paying for it.”

Lance Morgan, president of the California-based Marine Conservation Institute, calls deep-sea trawling “one of the most destructive practices that is within our ability to resolve” but noted it has not received the policy focus it deserves. He said he hopes Victorero’s work prompts fishing nations to take a closer look at deep-sea trawling and, hopefully, banish it, as some nations have already done.

“The under-reported catch is more fuel to the fire for why bottom trawling should be banned,” he said.

Link:

<https://www.newsdeeply.com/oceans/articles/2018/04/16/race-to-the-bottom-impact-of-deep-sea-fishing-severely-underestimated>