



Vancouver

## Billions in revenue lost globally for bottom trawling fisheries: new study

By MELANIE GREEN StarMetro Vancouver  
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VANCOUVER—It's impossible to evaluate the true costs and benefits of global fisheries without determining the amount of waste and knowing what's coming to shore, researchers say.

That cost has not been fully considered until now: Industrial fisheries that rely on bottom trawling wasted 437 million tonnes of fish and missed out in \$560 billion in revenue, according to a [new study](#) from the University of British Columbia.

In comparison, small-scale fisheries were responsible for roughly 1.3 billion tonnes but their catch was worth a whole lot more — roughly \$200 billion — because they catch fewer quantities of higher-value species such as crabs.

Instead of scraping the ocean floors, they tend to use small gillnets, traps, lines and hand tools. Bottom trawling is a practice where industrial fishing vessels drag large nets along the sea floor and has long been known as having detrimental environmental effects, such as destruction of non-target species, changes in the ecosystem and reduced biodiversity.

“Industrial fisheries do not bring everything they catch to port,” explained Tim Cashion, lead author of the study. “They threw out

more than 750 million tonnes of fish and 60 per cent of that waste was due to bottom trawlers alone.”

For many countries, what is recorded is only what is landed on shore, Cashion continued. For instance, sometimes countries report catch by larger groups of animals such as salmon, rather than by species. That economic loss of industrial fisheries unreported catch has been somewhat of a mystery for researchers, he said.

“The worst part is that, in general, bottom trawlers are so expensive to operate that the only way to keep them afloat is by giving them government subsidies,” said Deng Palomares, co-author of the study. “Ironically, had they landed that catch, they would have made \$560 billion.”

Waste fish — which face a high probability of dying — are dumped into the ocean. Instead of being used for human consumption, they’re fed to livestock or farmed fish, Cashion explained.

“If we are not considering the broader impacts of different fishing methods, then we are not considering the full cost,” Cashion said, pointing to the need to value costs based on fishing methods used.

The study, carried out by the [Sea Around Us](#) initiative at UBC’s Institute for the Oceans and Fisheries, documented bottom trawling between 1950 and 2014 and noted globally, industrial and small-scale fisheries caught 5.6 billion tonnes of fish during that time.



Fishing boats head from the harbour in West Dover, N.S. as the lobster season on the province's South Shore opened in 2011. (ANDREW VAUGHAN / THE CANADIAN PRESS)

Looking at every maritime country in the world, the team identified the different tools used by each fishery and paired them with a database that included reported and unreported catches by country, fishing sector, year and species.

The long-term sustainability of fisheries is a priority for the federal government, Fisheries and Oceans Canada said in an email statement. With all [marine protected areas](#) and marine refuges to date, Canada has protected roughly 8 per cent of marine and coastal areas, according to a DFO report.

“DFO is exploring additional opportunities to identify ... new measures that have biodiversity conservation benefits,” the report read. There are several marine protected areas in Canadian waters including areas where bottom trawling is now prohibited.

But there are still areas allowed to use the method which has left some groups “unhappy,” Cashion said.

Cashion intends to use the findings to bolster further research on the total value of catches broken down by fishing method to determine “the value they give to society.”

This new information can be used to boost small-scale fisheries because with very little support and infrastructure, they already generate more value, according to study co-author Daniel Pauly, who is the principal investigator of Sea Around Us.

“If, based on these results, artisanal fisheries received the \$35 billion in subsidies that industrial fisheries get every year, they would be able to employ more people than they already do, take better care of their catch, supply specialized markets with a superior product and provide nutritious food for the communities where they operate,” he said.

But subsidies allow the practice to continue when it should stop biologically, Cashion said. The first step is to reduce or eliminate subsidies to improve sustainability.

Cashion said renewed United Nations interest — citing [goal 14](#) for the sustainable development plan — means more explicit concern and potential regulation of improving and conserving harvesting in the oceans.

The study was published this week in Fisheries Research.

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