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**207 million tonnes of CO<sub>2</sub> were released into the atmosphere by marine fishing vessels only in 2016**

**CO<sub>2</sub> emissions in fishing would be higher than estimated**

**WORLDWIDE**  
Tuesday, January 29, 2019, 01:20 (GMT + 9)

A new study published by a group of researchers of the [Sea Around Us](#) project suggests that carbon dioxide emissions (CO<sub>2</sub>) from the fuel burnt by fishing boats are 30 per cent higher than previously reported.

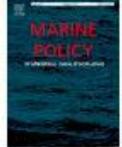
The team of scientists is made of researchers from Sea Around Us at the [University of British Columbia Columbia](#) (UBC), and Sea Around Us - Indian Ocean, University of Western Australia (UWA), and their findings were published in the journal *Marine Policy*.

 **ELSEVIER**

**Marine Policy**

Available online 23 January 2019

In Press, Corrected Proof 



## Global trends in carbon dioxide (CO<sub>2</sub>) emissions from fuel combustion in marine fisheries from 1950 to 2016

Krista Greer <sup>a</sup>  , Dirk Zeller <sup>b</sup>, Jessika Woroniak <sup>a</sup>, Angie Coulter <sup>a</sup>, Maeve Winchester <sup>a</sup>, M.L. Deng Palomares <sup>a</sup>, Daniel Pauly <sup>a</sup>

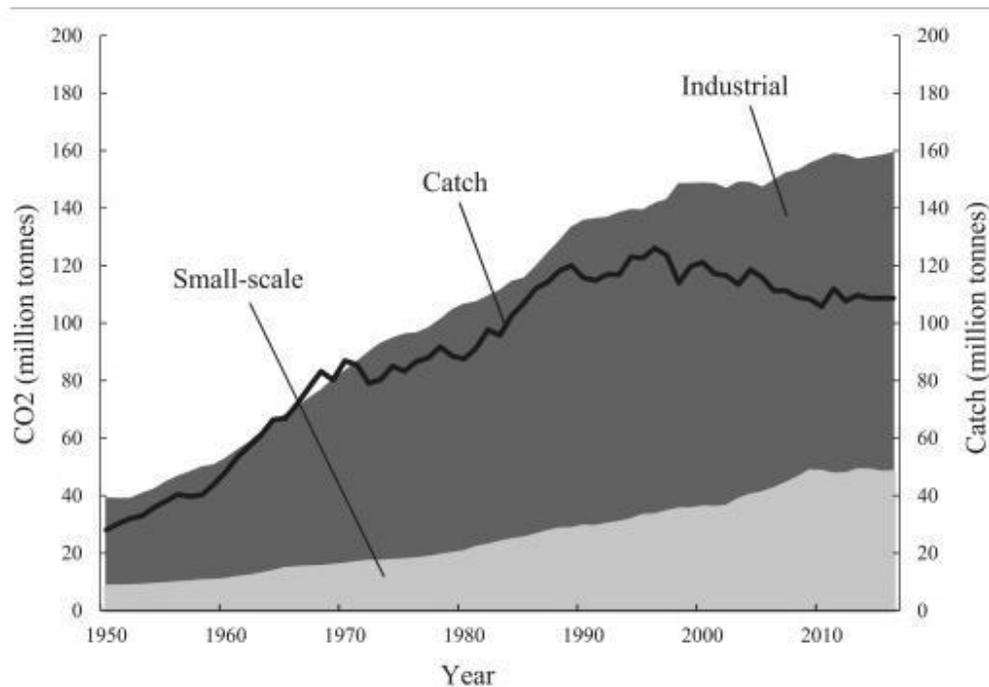
The study shows that only in 2016, 207 million tonnes of CO<sub>2</sub> were released into the atmosphere by marine fishing vessels, almost the same amount of CO<sub>2</sub> emitted by 51 coal-fired power plants in the same timeframe.



**Krista Greer,**  
Researcher Sea Around Us  
University of British Columbia

"The marine fishing industry relies heavily on the use of fossil fuel and its role in global greenhouse gas emissions has been largely ignored from a policy or management perspective," said Krista Greer, lead author of the study and a researcher with the Sea Around Us at UBC's Institute for the Oceans and Fisheries.

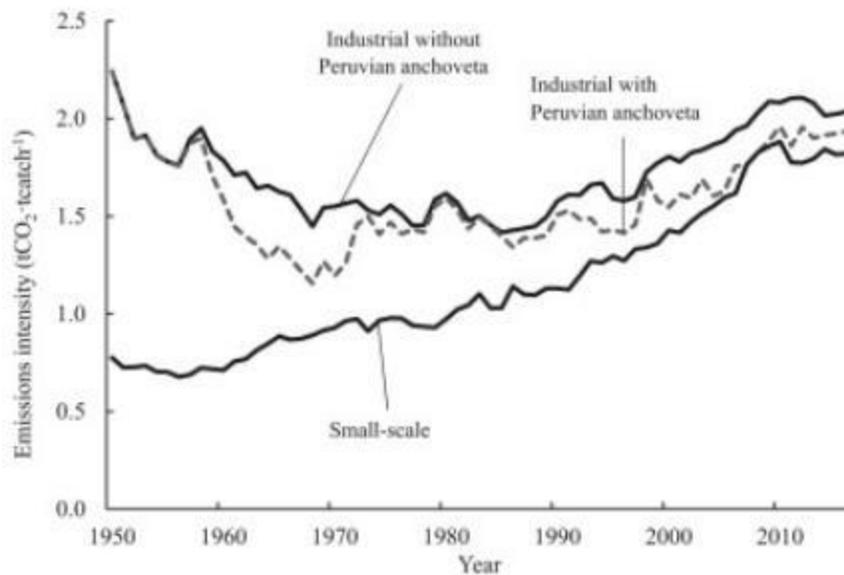
"Until now, the most comprehensive study of carbon dioxide emissions from fishing suggested that for the year 2011, fisheries released 112 million tonnes of CO<sub>2</sub> per year from the combustion of fuel during fishing," she added.



Total CO<sub>2</sub> emissions by fishing sector, and total reconstructed global catch.

Previous research implied that fisheries contributed only 0.29 per cent of global CO<sub>2</sub> emissions, while the new study indicates that their contribution is almost twice that number, mainly due to the UBC-UWA research considering regional differences in fuel use, based on fishing effort and the amount of fuel used to catch 30 million tonnes of fish that were not reported in 2016.

The researchers used the Sea Around Us' global catch and fishing effort database, which allowed them to calculate the amount of carbon dioxide emitted by each boat operating in each country's different fishing sectors, as well as the amount of CO<sub>2</sub> emitted per each tonne of fish those boats catch, also known as emissions intensity.



CO<sub>2</sub> emissions intensity of global fisheries, by major fishing sectors. The industrial sector is shown with and without the highly variable Peruvian anchoveta catches.

"We found that global emissions intensity for 2016, on average, was 1.88 tonnes of carbon dioxide, compared to 1.5 tonnes in 1950. This, despite the fact that marine catches have been declining since the mid-1990s. The emissions intensity of small-scale, artisanal and subsistence fleets has increased the most over the time period in terms of magnitude, but the industrial sector continues to be the greatest contributor to overall emissions," Greer explained.

In their analysis, the researchers also found that the emissions intensity started to grow in the 1980s.



"Small-scale fisheries caught up with the industrial sector in this regard because artisanal and subsistence fishers began installing gasoline-powered engines on their boats. This means that there's a need to think of emission

reduction strategies, such as switching to small diesel-powered engines in small-scale fisheries,” said Dirk Zeller, co-author of the study and director of the Sea Around Us – Indian Ocean at the University of Western Australia.

The scientists highlight that industrial fisheries also need to reduce their fishing effort, which is currently 3-4 times what it should be in order to be sustainable. This would allow a reduction in CO2 emissions by industrial fleets and also foster the recovery of declining fish populations.



**Dr. Dirk Zeller**

Leader Sea Around Us – Indian Ocean  
University of Western Australia

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