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Bottom trawling and carbon – the facts at last

The fishing industry has been under fire for 12 months after a claim that bottom trawling released more carbon into the ocean than all airline travel.

The headline-grabbing claim was made in a press release that accompanied a paper published in the scientific journal *Nature*.

The paper by *Saba et al. 2021* gained international media traction immediately. The paper, more widely, offered up the opinion that increasing Marine Protected Areas (MPAs) to stop fishing would lead to more seafood harvest, more biodiversity, and a reduced carbon footprint – and then went on to make the claim about bottom trawling's role in carbon production.

Whilst the industry had serious doubts about the veracity of the claim, it has taken until now for the science community to offer up a solid refutation and for the original authors of the report to acknowledge it was flawed.

Ray Hilborn of the University of Washington School of Fisheries and Michel Kaiser of the Heriot-Watt University in Edinburgh have had that opportunity and the result has been published in Nature.

Max Mossler, the managing editor of Sustainable Fisheries at the University of Washington, summarises their findings.

“According to Hilborn and Kaiser, the most severe flaw in *Sala et al. 2021* is the inconsistent accounting of fishing effort in the author’s MPA scenarios.

“In the carbon and biodiversity model, *Sala et al.* assume that when an area is placed into an MPA, the fishing effort that was previously there disappears. But, in the food provisioning model, the paper assumes fishing effort moves to other areas open to fishing. This upwardly biases their claims that MPAs could simultaneously reduce carbon footprint, improve biodiversity, and increase catch.

“MPAs certainly reduce fishing effort inside a protected area, but in the real world, fishing effort does not simply disappear— it moves outside the MPA to places where fishing is still allowed. In this scenario, the benefits to carbon emissions and biodiversity presented in *Sala et al.* would significantly decrease, perhaps even show a net negative response because fishing effort generally goes to places with high catch rates, and if forced to fish elsewhere, more effort is required to achieve the same catch.”

In their response to Hilborn and Kaiser, the original authors acknowledge that the attention-grabbing statistic in the press release that bottom trawling releases more carbon into the ocean than all airline emissions would only be true if fishing effort disappears.

Mossler points out that Nature has yet to publish a [comment](#) pointing out other issues in the carbon model that show *Sala et al.* overestimated their projections by up to 100 times.

“Regardless, picking and choosing fishing effort assumptions for different computer models is a clear bias—one that was especially deceiving as the assumptions were not evident in the text of the paper, only deep into the supplementary materials.”

Hilborn and Kaiser also take issue with the premise that MPAs are a fisheries management tool, and we will cover that in a later column.

The industry is grateful to Hilborn, Kaiser, and other pioneers in the marine science fraternity who continue to question the work of their peers.

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The Conference will span two days and include a mixture of keynote and technical content, along with the opportunity for delegates to partake in a Q&A panel discussion at the end of each session.

This Conference programme is built around the theme, "Sea into the Future" and will look at how the New Zealand seafood sector can continue to grow and thrive in a changing environment.

It will explore new technologies, improved environmental performance, the impact that climate change, and economic value of the seafood sector to New Zealand.

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Sydney Fish Market has launched a website to enable buyers and sellers of seafood to learn about the new online trading system before it launches.

SFMblue is a fast, user-friendly platform with a focus on making trading simple for buyers and sellers of seafood.

This digital trading platform will work in conjunction with the current Dutch auction at Sydney Fish Market, but will allow extended trading hours connecting more sellers to buyers.

Pre-registration is available through the button below.

SFMblue



Online survey

FirstMate has an online survey that is seeking input from the seafood sector on the types of wellbeing support services that would be valued. This research will help inform the design of FirstMate services, to make sure they are fit for purpose.

Five \$200 grocery vouchers will be drawn from those who participate.

Take survey here

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