

Increase in storms could have 'catastrophic impact' on fishing industry

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Potential changes in the frequency and intensity of storms off the coast

of the UK and around the world could have a "catastrophic impact" on the livelihood of fishermen and sustainability of fishing industries, research led by the University of Exeter has shown.

The research, based on a review of past studies and examination of future projections, warns that the increase in storms could make fishing more dangerous, displace fish from their natural habitats and interfere with the ability of fish to breed.

Storms off the coast of the UK are projected to become more frequent and intense over the next two centuries and more dramatic storms are expected in the North Sea and North Atlantic, to the West of the UK, Ireland and France, threatening the future of fishermen and the fish they catch.

The paper, *Changing Storminess and Global Capture Fisheries*, published in the journal *Nature Climate Change*, says detailed projections and stimulations are urgently required to predict more precisely where storms are likely to hit in future and to support fishing communities to adapt to this element of climate change.

The team of experts from the University of Exeter, Met Office, University of Bristol and Willis Research Network, urges climate-change research to focus sharply on the increase in frequency and intensity of storms as a priority.

Lead author Nigel Sainsbury, of the University of Exeter, said: "Storms are a threat to fishermen's safety, productivity, assets and jobs and to the health of billions of people around the world who rely on fish for their daily nutrition.

"Changing storminess could have serious consequences for vulnerable coastal communities around the world. Conducting research in this area

is critical to support the adaptation of fisheries to climate change."

The research, which includes a review of [storm](#) projection studies, highlights a potential greater exposure to tropical cyclones towards the East China Sea and increased post-Monsoon storms in the Arabian Sea. In contrast, storms in the Mediterranean are likely to reduce over the next two centuries. Over the next 200 years, the frequency and intensity of storms are projected to increase in the Eastern North Atlantic (i.e. to the west of UK, Ireland and France) during autumn and winter.

Storms not only pose a threat to the safety of fishermen at sea, or keep them in port, but kill fish and destroy their habitats, affecting the livelihood of fishermen who rely on them.

In the UK the fishing industry contributes £1.4 billion to the UK economy and is an important source of jobs for [coastal communities](#) from Cornwall to the Shetland Islands.

Associate Professor Steve Simpson, a marine biologist at the University of Exeter and co-author in this study, warned: "Our past research has shown how warming seas gradually change the composition of fisheries by shifts in distribution.

"But storms can radically change fish populations via temporary or permanent displacement, and can interrupt fish larval dispersal and damage or destroy essential habitat that fish depend upon."

Fishing and [fish](#) farming supports 12% of the global population and 38 million fishermen and women.

Fish provide 3.1 billion people with close to 20% of their animal protein, and are relied upon for micro-nutrients, vital to the health of children and pregnant women.

Co-author Geoffrey Saville, of Willis Research Network, said:
"Research is required to identify and evaluate ways in which fisheries can adapt to changing storminess. One possibility that we believe is worth investigating is the adoption of financial mechanisms that are already being used to help farmers to recover from drought."

The researchers call for a sharper focus on the impacts of storms which have "the potential to cause more immediate and catastrophic impacts" than ocean warming.

More information: Nigel C. Sainsbury et al, Changing storminess and global capture fisheries, *Nature Climate Change* (2018). [DOI: 10.1038/s41558-018-0206-x](https://doi.org/10.1038/s41558-018-0206-x)

Provided by University of Exeter

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