

# Climate change causes harmful algal blooms in North Atlantic: study

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Warming oceans and increases in windiness could be causing of an abundance of harmful algal blooms in the North Atlantic Ocean and North Sea, according to new research.

The study, published in *Nature* [Climate Change](#) found there has been a dramatic switch between the prevalence of [dinoflagellates](#) to diatoms – two groups which include many of the microscopic planktonic plants forming the base of the ocean’s food chain.

The patterns show shifts in the distribution of species known to cause harmful effect through toxin poisoning.

The researchers, from Swansea University’s Institute of Life Science and the Sir Alister Hardy Foundation for Ocean Science in Plymouth said the effects of the shift could already be impacting UK waters, with shellfish harvesting sites off the Scottish west coast closing.

“Imagine looking at your garden one morning and finding that the grass had suddenly been replaced by bushes,” said Professor Graeme Hays, one of the paper’s authors from Swansea University.

“This may sound far-fetched but we have found changes of this magnitude in the biology of the North Atlantic, with a dramatic switch in the prevalence of dinoflagellates to diatoms.”

Using over 92,000 samples spanning 50 years from the Continuous

Plankton Recorder survey, the team found that increases in temperature – a key element of climate change – had helped to drive this shift.

They also discovered that an increase in the wind levels of the North Atlantic region over the last 50 years had a part to play in the shift.

“This increase in windiness is something that is often overlooked,” said Professor Hays. “In the ocean windiness promotes vertical mixing of the water, which in turn has profound impacts on surface nutrient levels and the vertical distribution of plankton.”

He said the implications of the discovery are not yet fully known, but that the switch is like to be felt much higher up the food chain, impacting on larger animals such as fish and whales.

**More information:** Changes in marine dinoflagellate and diatom abundance under climate change, [DOI: 10.1038/nclimate1388](https://doi.org/10.1038/nclimate1388)

Source: RTCC

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