

# Could the Arctic be coming out of hibernation?

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(PhysOrg.com) -- Reduced ice cover in the Arctic Ocean could be the reason why the UK has experienced colder winters recently.

The ice has acted to insulate temperature changes in the sea from the atmosphere. But as the ice decreases in coverage this could have a consequent effect on our climate.

“Some climatologists believe the absence of [sea ice](#) north of Siberia last autumn allowed the warmer open ocean to heat the atmosphere, resulting in changed wind patterns and the development of a “blocking” atmospheric high pressure system over Siberia. This then results in cold air being channelled south from the Arctic, over northern Europe,” explains Dr Tom Rippeth of Bangor University.

Scientists at the University have also just discovered that the [Arctic Ocean](#), is not as tranquil as previously supposed by oceanographers and this too could have an effect on the climate.

New measurements by Yueng-Djern Lenn, Chris Old and Tom Rippeth of the University’s School of Ocean Sciences show for the first time that there are occasional bursts of turbulence beneath the Arctic ice which mix adjacent water layers together.

According to the new findings, there is considerably more of this mixing when there is no sea ice insulating the sea surface from the atmosphere.

Such mixing events are important. Under the ice they can bring heat from the ocean interior to warm the underside of the ice, whilst in open water they can take heat from the surface layers, which have been warmed by the sun, into the ocean interior.

Commenting Dr Tom Rippeth said: “These results are highly significant as they are helping us to understand the role of sea ice in the Arctic and in particular how it impacts heat exchange between the ocean interior and the [atmosphere](#).”

“They imply that the Arctic Ocean will become much more turbulent in a warming world. We are already seeing a big reduction in the extent of sea ice cover, particularly during the summer months, and so there is a lot more mixing going on.”

“What we could be seeing is the Arctic coming out of hibernation, and the question we must consider is what impact this will have on our [climate](#) here in the UK.”

Indeed some scientists believe that we may already be feeling the effects of disappearing Arctic sea ice, through more severe winters, such as those endured during the past couple of winters in the UK.

**More information:** The paper Vertical Mixing at intermediate depth in the Arctic boundary current Authors YD Lenn, PJ Wiles, S Torres-Valdes, EP Abraham TP Rippeth, JH Simpson, S Bacon, SW Laxon, I Poluakov, V Ivanon and S Kirillov published in *Geophysical Research Letters* L05601, [doi:10.1029/2008GL036792](https://doi.org/10.1029/2008GL036792)

Provided by Bangor University

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