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Next decade 'may see no warming'
By Richard Black
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Crocuses. Image: AFP/Getty
La Nina conditions have brought unseasonably cold weather to Europe

The Earth's temperature may stay roughly the same for a decade, as natural climate cycles enter a cooling phase, scientists have predicted.

A new computer model developed by German researchers, reported in the journal Nature, suggests the cooling will counter greenhouse warming.

However, temperatures will again be rising quickly by about 2020, they say.

Other climate scientists have welcomed the research, saying it may help societies plan better for the future.

The key to the new prediction is the natural cycle of ocean temperatures called the Atlantic Multidecadal Oscillation (AMO), which is closely related to the warm currents that bring heat from the tropics to the shores of Europe.

The cause of the oscillation is not well understood, but the cycle appears to come round about every 60 to 70 years.

Imagine the payoff of knowing with some certainty what the next 10 years hold in terms of temperature and precipitation
Professor Michael Schlesinger

It may partly explain why temperatures rose in the early years of the last century before beginning to cool in the 1940s.

"One message from our study is that in the short term, you can see changes in the global mean temperature that you might not expect given the reports of the Intergovernmental Panel on Climate Change (IPCC)," said Noel Keenlyside from

the Leibniz Institute of Marine Sciences at Kiel University.

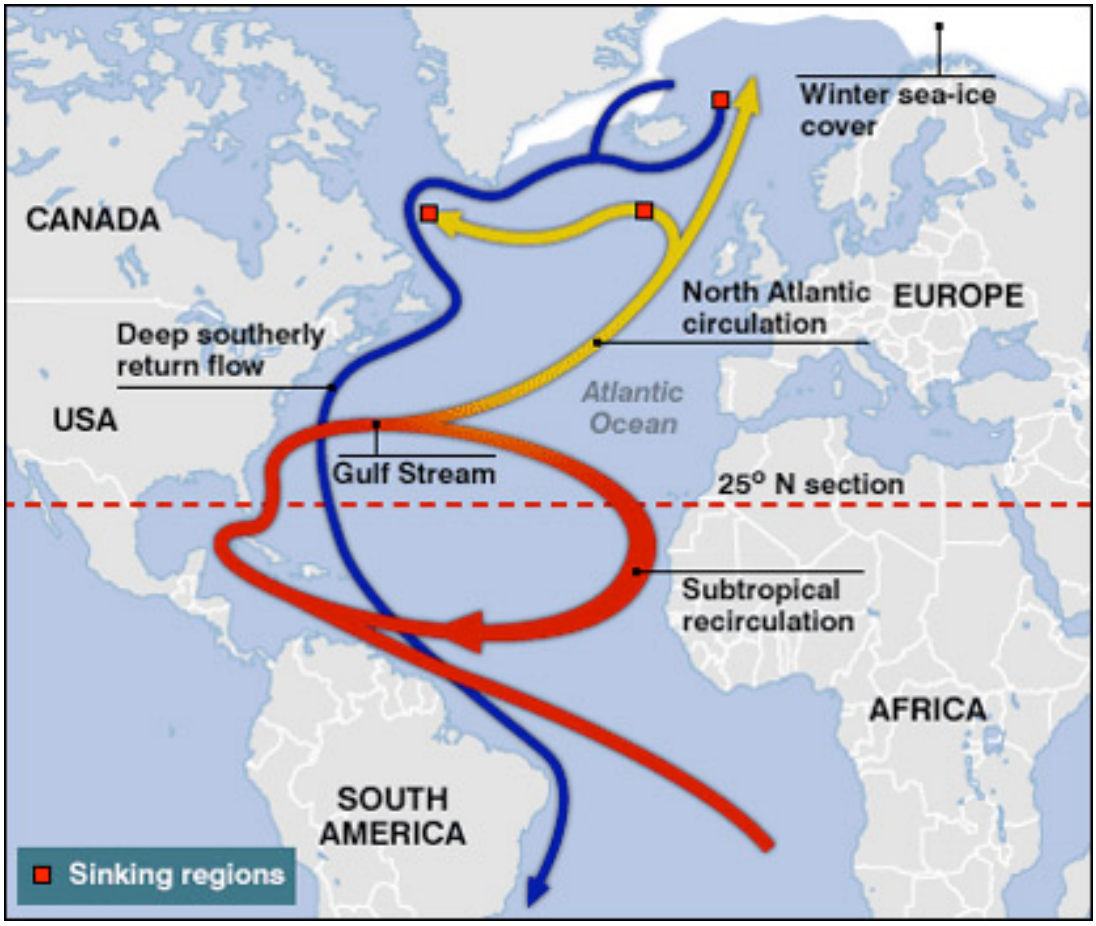
His group's projection diverges from other computer models only for about 15-20 years; after that, the curves come back together and temperatures rise.

"In the long term, radiative forcing (the Earth's energy balance) dominates. But it's important for policymakers to realise the pattern," he told BBC News.

Deep patterns

Modelling of climatic events in the oceans is difficult, simply because there is relatively little data on some of the key processes, such as the meriodional overturning circulation (MOC) - sometimes erroneously known as the Gulf Stream - which carries heat northwards in the Atlantic.

Only within the last few years have researchers begun systematically deploying mobile floats and tethered buoys that will, in time, tell us how this circulation is changing.



Atlantic circulation

Enlarge Image

As a substitute for direct measurements of the MOC, the Kiel team used data going

back 50 years from the Labrador Sea, where warm water gives up its heat to the atmosphere and sinks, before returning southward lower in the ocean.

Combining this ocean data with established models of global warming, they were able to generate a stream of model results that mimicked well temperatures observed in the recent past over the north Atlantic, western Europe and North America.

Looking forward, the model projects a weakening of the MOC and a resulting cooling of north Atlantic waters, which will act to keep temperatures in check around the world, much as the warming and cooling associated with El Nino and La Nina in the Pacific bring global consequences.

"We have to take into account that there are uncertainties in our model; but it does suggest a plateauing of temperatures, and then a continued rise," said Dr Keenlyside.

'No distraction'

The projection does not come as a surprise to climate scientists, though it may to a public that has perhaps become used to the idea that the rapid temperature rises seen through the 1990s are a permanent phenomenon.

"We've always known that the climate varies naturally from year to year and decade to decade," said Richard Wood from the UK's Hadley Centre, who reviewed the new research for Nature.

"We expect man-made global warming to be superimposed on those natural variations; and this kind of research is important to make sure we don't get distracted from the longer term changes that will happen in the climate (as a result of greenhouse gas emissions)."

Buoys. Image: Nerc
Ocean buoys should produce more data about the Atlantic oscillation

Dr Wood cautions that this kind of modelling is in its infancy; and once data can be brought directly from the Atlantic depths, that may change the view of how the AMO works and what it means for the global climate.

As with the unusually cold weather seen recently in much of the northern hemisphere - linked to La Nina conditions - he emphasises that even if the Kiel model proves correct, it is not an indication that the longer-term climate projections of the IPCC and many other institutions are wrong.

Michael Schlesinger, the US scientist who characterised the AMO in 1994, described the new model as "very exciting".

"No doubt we need to have more data from the deep ocean, and we don't have that at present," the University of Illinois at Urbana-Champaign researcher told BBC News.

"But imagine the payoff of knowing with some certainty what the next 10 years hold in terms of temperature and precipitation - the economic impacts of that would be significant."

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