Global warming will plunge Britain into new ice age 'within decades'

By Geoffrey Lean, Environment Editor

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Britain is likely to be plunged into an ice age within our lifetime by global warming, new research suggests.

A study, which is being taken seriously by top government scientists, has uncovered a change "of remarkable amplitude" in the circulation of the waters of the North Atlantic.

Similar events in pre-history are known to have caused sudden "flips" of the climate, bringing ice ages to northern Europe within a few decades. The development - described as "the largest and most dramatic oceanic change ever measured in the era of modern instruments", by the US Woods Hole Oceanographic Institute, which led the research - threatens to turn off the Gulf Stream, which keeps Europe's weather mild.

If that happens, Britain and northern Europe are expected to switch abruptly to the climate of Labrador - which is on the same latitude - bringing a nightmare scenario where farmland turns to tundra and winter temperatures drop below -20C. The much-heralded cold snap predicted for the coming week would seem balmy by comparison.

A report by the International Geosphere-Biosphere Programme in Sweden - launched by Nobel prize-winner Professor Paul Crutzen and other top scientists - warned last week that pollution threatened to "trigger changes with catastrophic consequences" like these.

Scientists have long expected that global warming could, paradoxically, cause a devastating cooling in Europe by disrupting the Gulf Stream, which brings as much heat to Britain in winter as the sun does: the US National Academy of Sciences has even described such abrupt, dramatic changes as "likely". But until now it has been thought that this would be at least a century away.

The new research, by scientists at the Centre for Environment, Fisheries and Acquaculture Science at Lowestoft and Canada's Bedford Institute of Oceanography, as well as Woods Hole, indicates that this may already be beginning to happen.

Dr Ruth Curry, the study's lead scientist, says: "This has the potential to change the circulation of the ocean significantly in our lifetime. Northern Europe will likely experience a significant cooling."

Robert Gagosian, the director of Woods Hole, considered one of the world's leading oceanographic institutes, said: "We may be approaching a threshold that would shut down [the Gulf Stream] and cause abrupt climate changes.

"Even as the earth as a whole continues to warm gradually, large regions may experience a precipitous and disruptive shift into colder climates." The scientists, who studied the composition of the waters of the Atlantic from Greenland to Tierra del Fuego, found that they have become "very much" saltier in the tropics and subtropics and "very much" fresher towards the poles over the past 50 years.

This is alarming because the Gulf Stream is driven by cold, very salty water sinking in the North Atlantic. This pulls warm surface waters northwards, forming the current.

The change is described as the "fingerprint" of global warming. As the world heats up, more water evaporates from the tropics and falls as rain in temperate and polar regions, making the warm waters saltier and the cold ones fresher. Melting polar ice adds more fresh water.

Ominously, the trend has accelerated since 1990, during which time the 10 hottest years on record have occurred. Many studies have shown that similar changes in the waters of the North Atlantic in geological time have often plunged Europe into an ice age, sometimes bringing the change in as little as a decade.

The National Academy of Sciences says that the jump occurs in the same way as "the slowly increasing pressure of a finger eventually flips a switch and turns on a light". Once the switch has occurred the new, hostile climate, lasts for decades at least, and possibly centuries.

When the Gulf Stream abruptly turned off about 12,700 years ago, it brought about a 1,300-year cold period, known as the Younger Dryas. This froze Britain in continuous permafrost, drove summer temperatures down to 10C and winter ones to -20C, and brought icebergs as far south as Portugal. Europe could not sustain anything like its present population. Droughts struck across the globe, including in Asia, Africa and the American west, as the disruption of the Gulf Stream affected currents worldwide.

Some scientists say that this is the "worst-case scenario" and that the cooling may be less dramatic, with the world's climate "flickering" between colder and warmer states for several decades. But they add that, in practice, this would be almost as catastrophic for agriculture and civilisation.

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