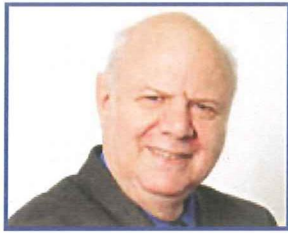


Geoffrey Lean

Geoffrey Lean is Britain's longest-serving environmental correspondent, having pioneered reporting on the subject almost 40 years ago.



There's bigger trouble ahead from Icelandic volcanoes as the world heats up, scientists warn

By [Geoffrey Lean](#) [World](#) Last updated: April 18th, 2010

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This may just be the start of it. For vulcanologists are warning that there may be more, or bigger, Icelandic eruptions – like the one that has shut down air traffic in Europe for days – over the next decades as the world heats up. They say that melting icecaps, by taking a great weight off the surface, are likely increasingly to free magma from deep underground.

As if things were not bad enough already. The eruption of Eyjafjallajökull, it is feared, may continue for weeks, months or even longer, disrupting air traffic whenever the wind blows its ash into flight paths: last time it blew up, in 1821, it went on for more than a year. And it may well be followed by another volcano, Katla, some five times bigger, which would spew out far more of the stuff and could therefore cause far greater chaos. Every time Eyjafjallajökull has blown its top since the Vikings first arrived on the island in the ninth century, Katla has swiftly followed.

But the vulcanologists say these could just be the opening volleys of a decades-long barrage, as climate change takes hold. “Global warming melts ice and this can influence magmatic systems”, Dr Freysteinn Sigmundsson, of the Nordic Volcanological Centre at the University of Iceland, told Reuters. “Our work suggests that eventually there will be either somewhat larger eruptions or more frequent eruptions in Iceland in coming decades.”

Dr Carolina Pagli, of Leeds University, agrees. Her research suggests that rocks cannot expand to turn into magma when they are under the kind of high pressure exerted by being under an icecap. But, she says, “as the ice melts the rocks can melt because the pressure decreases.” **And Prof Andrew Hooper, an expert on Iceland’s volcanoes at Delft University adds that as the ice sheets shrink, “we should expect more frequent voluminous eruptions in the future.”**

Sigmundsson and Pagli published research in 2008 estimating that the melting of about a tenth of Iceland’s biggest icecap, Vatnajökull, over the last century had caused the land to rise about an inch a year and led to the growth of a vast mass of magma, measuring about a third of a cubic mile, underground. Similar processes led to a surge in volcanic eruptions in Iceland at the end of the last ice age, and Pagli says climate change could also spark off eruptions in such other frozen places as Alaska, Patagonia and Antarctica

Ironically the eruptions could, in themselves, cool the planet. The sulphur dioxide that they fling into the air reflects sunlight, and so temperatures can drop. A far bigger explosion, at Mt. Pinatubo in the Philippines in 1991 caused an average cooling of about 0.5 degrees centigrade worldwide over the following year. But, of course, carbon dioxide emissions continued to build up in the atmosphere so the thermometer rose to compensate once the effect wore off.

The eruption of Eyjafjallajökull itself, it should be stressed, has neither been caused by melting ice, nor is likely to cool temperatures globally, though it might have a temporary effect on Northern Europe. Dr Sigmundsson points out that the volcano lies under a relatively small icecap that would not have exerted much pressure. And the eruption is far smaller than Pinatubo – and is throwing its emissions far less high in to the atmosphere. But if he and his fellow scientists are right, we may have to put up with a lot more disruption ahead as global warming increases.