

Threat Of 16 Ft. Rise In Sea Levels

West Antarctic Ice Sheet Could Collapse

By Michael McCarthy
Environment Editor

The Independent - UK British scientists have discovered a new threat to the world which may be a result of global warming. Researchers from the Cambridge-based British Antarctic Survey (BAS) have discovered that a massive Antarctic ice sheet previously assumed to be stable may be starting to disintegrate, a conference on climate change heard yesterday. Its collapse would raise sea levels around the earth by more than 16 feet.

BAS staff are carrying out urgent measurements of the remote points in the West Antarctic Ice Sheet (WAIS) where they have found ice to be flowing into the sea at the enormous rate of 250 cubic kilometres a year, a discharge alone that is raising global sea levels by a fifth of a millimetre a year.

Professor Chris Rapley, the BAS director, told the conference at the UK Meteorological Office in Exeter, which was attended by scientists from all over the world, that their discovery had reactivated worries about the ice sheet's collapse.

Only four years ago, in the last report of the UN's Intergovernmental Panel on Climate Change (IPCC), worries that the ice sheet was disintegrating were firmly dismissed.

Professor Rapley said: "The last IPCC report characterised Antarctica as a slumbering giant in terms of climate change. I would say it is now an awakened giant. There is real concern."

He added: "The previous view was that WAIS would not collapse before the year 2100. We now have to revise that judgement. We cannot be so sanguine." Collapse of the WAIS would be a disaster, putting enormous chunks of low-lying, desperately poor countries such as Bangladesh under water - not to mention much of southern England.

The conference has been called by Tony Blair as part of Britain's efforts to increase the pace of international action on climate change, in a year when the UK is heading the G8 group of industrialised nations and the European Union.

Mr Blair has asked it to explore the question of how much climate change the world can take before the consequences are catastrophic for human society and ecosystems.

Yesterday, it heard several alarming new warnings of possible climate-related catastrophic events, including the failure of the Gulf Stream, which keeps the British Isles warm, and the melting of the ice sheet covering Greenland.

But it was the revelations of Professor Rapley, head of one of the world's most respected scientific bodies, which were the most dramatic, as they reopened a concern many scientists assumed had been laid to rest.

Antarctica as a whole is a land covered by very thick ice, but the ice sheet covering the eastern half of the continent is very stable as it sits on rocks that are well above sea level.

Worries about the ice covering the western half first surfaced more than 25 years ago when it was realised that the base rocks are actually well below the level of the sea.

In some circumstances, it was feared, such as a melting of the edge of the ice sheet from rising temperatures, sea water could get under it and eventually lead to its collapse.

Yet the 2001 IPCC report, the principal consensus view of the international community of climate scientists, thought that very unlikely, and said such a collapse was improbable before the end of the current century, or even for 1,000 years.

What puts a very big question mark over this, Professor Rapley said, was the recent discovery of the extremely rapid discharge of ice into the Amundsen sea from the WAIS at three remote ice streams, Pine Island, Thwaites, and another unnamed site.

"There is a very dramatic discharge from this region which, five years ago when the IPCC report was written, we just didn't know about," he said. "What we have found completely opens up the whole debate." It had only been recently discovered, he said, because the area was so remote. But BAS

scientists, with US help, had established a base in the area to investigate. Professor Rapley said there was some evidence that the discharge was a relatively recent phenomenon and it might be caused by rising ocean temperatures.

Margaret Beckett, the Environment Secretary, who opened the conference, added another ominous prediction when she said that major global warming impacts on the world in the next 20 to 30 years could not be avoided. Whatever we do, potentially disastrous world temperature rises will take place because they are already "built into the system," she said.

Her forecast that we are powerless to prevent major damage from climate change is accepted by scientists but it is rare for such a frank admission from a politician. It reflects the concern at a high level.

It was amplified by senior climate researchers, who said the amount of future warming to which the world is firmly committed, because of greenhouse gases that have already been put into the atmosphere, will be enough to threaten the survival of many ecosystems and wildlife species such as polar bears and penguins.

"I believe that most of the warming we are expecting over the next few decades is now virtually inevitable, and even in this time frame we may expect a significant impact," Mrs Beckett said.

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