

26 February 2010

Vast iceberg 'may disrupt ocean currents'



The iceberg snapped from the Mertz Glacier Tongue

A vast iceberg which broke off the Antarctic continent this month could disrupt the world's ocean currents and weather patterns, scientists warn.

Australian researchers say the iceberg - the size of Luxembourg - could block an area that produces a quarter of the world's dense and very cold seawater.

They say a slowdown in the production of this water could result in colder winters in the north Atlantic.

The iceberg is currently floating south of Australia.

Dr Neal Young, a glaciologist at the Antarctic Climate and Ecosystems Research Centre in Tasmania, told the BBC that any disruption to the production of the super cold water - known as bottom water - in the region would affect ocean currents, and consequently weather patterns, for years to come.

"This area accounts for about 25% of the production of bottom water in Antarctica, and therefore it will reduce the overturning circulation rate," he said.

"You won't see it immediately, but it has downstream effects. And it will also have implications for penguins and other wildlife in the region that normally use this area for feeding."

Open water

The iceberg is sitting in an area of open water surrounded by sea-ice, known as a polynya.

Bottom water produced by polynyas sinks to the bottom of the sea and drives the conveyor-belt like ocean circulation around the globe.

Benoit Legresy, a French glaciologist, said the iceberg broke from the Mertz Glacier Tongue, a 160km spit of floating ice protruding from East Antarctica south of Melbourne.

It was dislodged by another, older, iceberg known as B9B which split off in 1987.

"The ice tongue was almost broken already. It was hanging like a loose tooth," Mr Legresy

said.

"If they [the icebergs] stay in this area - which is likely - they could block the production of this dense water, essentially putting a lid on the polynya," he added.

Huge icebergs break loose from Antarctica

11:33 AM Saturday Feb 27, 2010

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A massive iceberg struck Antarctica, dislodging another giant block of ice from a glacier. Photo / AP

SYDNEY - A massive iceberg struck Antarctica, dislodging another giant block of ice from a glacier, Australian and French scientists said.

The two icebergs are drifting together about 100 to 150 kilometres off eastern Antarctica following the collision on Feb. 12 or 13, said Australian Antarctic Division glaciologist Neal Young.

"It gave it a pretty big nudge," Young said of the 97-kilometre-long iceberg, about the size of Luxembourg, that collided with the giant floating Mertz Glacier and shaved off a new iceberg. "They are now floating right next to each other."

The new iceberg is 78 kilometres long and about 39 kilometres wide and holds roughly the equivalent of a fifth of the world's annual total water usage, Young told The Associated Press.

The iceberg that hit the Mertz Glacier is called B9B and had broken free from another part of Antarctica in 1987. It has been nuzzling and shifting alongside the Mertz for about 18 years before this month's dislodging, said Benoit Legresy, a researcher with the LEGOS laboratory

for geophysical studies in Toulouse, France.

Article continues below

"It was a slow process," Legresy said. He said B9B was "sitting there, it must have been pushed and pulled by the current every day and used as a hammer to bang on the other one by the ocean currents."

The dislodging occurred because of the iceberg's latest location and water that had warmed during Antarctica's summer, leaving less sea ice, Legresy said.

Some experts are concerned about the effect of the massive displacement of ice on the ice-free water next to the glacier, which is important for ocean currents, while others are less concerned.

Experts say this type of iceberg calving happens from time to time and these are not record large icebergs.

This area of water had been kept clear because of the glacier, said Steve Rintoul, a leading climate expert. With part of the glacier gone, the area could fill with sea ice, which would disrupt the sinking ability of the dense and cold water.

This sinking water is what spills into ocean basins and feeds the global ocean currents with oxygen, Rintoul explained.

As there are only a few areas in the world where this occurs, a slowing of the process would mean less oxygen supplied into the deep currents that feed the oceans.

"There may be regions of the world's oceans that lose oxygen, and then of course most of the life there will die," said Mario Hoppema, chemical oceanographer at the Alfred Wegener Institute for Polar and Marine Research in Germany.

But oceanographer Mike Meredith of the British Antarctic Survey said he doubts that will happen. There are other places around the world where oxygen sinks with cold water and for this to be a problem it would have to last over many years or decades.

The icebergs, weighing 860 billion tons and 700 billion tons respectively, are in water over the Antarctic Continental Shelf, Young said.

"We expect them to head west along the Antarctic coastline," he said.

Young said it was not likely they would reach as far north as Australia, and noted icebergs move slowly.

Oxygen levels being fed into the world's ocean currents are now changing "and the overturning circulation currents will respond to that change," Rintoul said. Observing what happens "will ... allow us to improve predictions of future climate change," he added.

- AP