West Antarctica could collapse again

Uncertain forecasts UN’s climate panel, IPCC estimated that sea levels will rise by between a few centimeters and one meter by 2100. But there is a risk that UN scientists did not bring in their computer models. If climate change spurs the parts of Antarctica may be a situation quite different: - The upper limit is three meters. I'm not saying it's likely, but today we do not have the knowledge necessary to exclude the possibility, says David Holland, an oceanographer at New York University.

In the previous climate the 2007 report did not count the IPCC with a great melting of the two ice sheets on Earth - Greenland and Antarctica.

Not that the scientists did not believe that ice masses which would contribute to sea level rise in the future, but simply because they lacked the knowledge to count on the phenomenon.

In the report presented last Monday, has for the first time, a significant contribution from Greenland and Antarctica into account - and also adjusted the upper limit of the sea level rise that we can expect for 2100.

The fastest is melting in Greenland. In some places, the temperature has risen four degrees since 1990. Heat the air accounts for about half the melting today. The rest is due to the sea water in the fjords also has become warmer - causing the glaciers along the coast to evict the iceberg at an accelerating rate.
During the peak year of 2012 lost the ice here 450 gigatons of their mass. This means that 450 cubic kilometers of water flowed into the sea, which is extremely high.

- But even in a normal year, it melts away three times as much ice as there is in the entire Alps, says Konrad Steffen, climate researcher at the Institute WSL in Zurich, Switzerland.

**187 million may suffer**
The fact that the ice sheets at both poles loses mass today, has meant that the IPCC worst scenario for sea level rise at the turn nowadays is just under a meter.

It is bad enough. In what has leaked out of the preparatory work for the next part of the IPCC report, which comes in the spring, there is talk of a sea level rise of between 50 centimeters and two meters in the worst case, could do 187 million people homeless, most of them in Asia.

But there is also uncertain factor in the IPCC's forecasts.

The UN report said that there that can change the present picture would be a sudden collapse of ice in West Antarctica - a mass of ice that contains enough water to raise sea levels by more than three meters.

The ice in West Antarctica is at an ancient archipelago, which it has pushed down hundreds of feet below him, and there are worrying signs in the area.

Satellite measurements show that parts of the ice is shrinking by up to a meter in thickness each year. According to scientists who have drilled down through the ice, it's because warm water eat the ice from below.

**Collapsing 10 000 years ago**
This part of Antarctica appears to have suffered a sudden collapse in history. When marine geologists John Andersson and Martin Jakobsson mapped bottoms in this area in 2010, they found traces of large icebergs that have pulled out after the last ice age, 10,000 years ago.

They believe that the tracks show that some of the so-called Pine Island Glacier must have collapsed and fallen into the sea in a very short time.

- Only one single event may have raised the oceans with up to an inch, said John Anderson, who works at Rice University in the U.S..

- We are accustomed to think of sea level rises in a smooth and even curve But probably it occurs stepwise at certain times, says Martin Jakobsson, Professor wise Stockholm University.

According to scientists, the seabed shape makes ice in some parts of the West Antarctic extra sensitive. In places where it slopes towards the continent, which at Pine Island, there is a risk that such a collapse could be followed by others, where the ice sheet withdraws kilometers to the next fixed point.

**Could happen again**
What are the chances of something similar could happen again?

According to John Andersson, there is concern among geologists for stability, especially in Pine Island area.

- The ice in West Antarctica is still on shaky ground, and Pine Island is one of those places where we are concerned about the modern glacier system. A collapse could occur in a few decades, he says.

Another factor that may play into the fact that sea level rises will not hit the same all over the
It is not like filling a bathtub, where the surface rises as much everywhere. Winds, currents and other factors mean that some areas can expect higher water levels, others with less.

Antarctica is one of those places that can count the most. It plays gravity from the giant ice sheet into. The continent will attract the water leaking from other places on earth, or that are just taking up space as the oceans warm up.

Therefore, there is a risk of melting in Greenland could have ice in the Southern Hemisphere to lose their footing.

- A meter water rise globally would mean 1.6 meters in Antarctica, and it could be starting the whole process, says Konrad Steffen.

**Insufficient knowledge**

In the latest UN report, the researchers write that a collapse of the West Antarctic could affect estimates of how much sea levels will rise, but that it is "unlikely that the contribution would exceed several feet in this century"

Oceanographer David Holland, who works both in Greenland and Antarctica, thinks of itself to the IPCC's figures are the most realistic that we have today, but he points out that while there is still much we do not know.

- For me, the upper limit of sea level as the ice that is available, that is over three meters. I'm not saying it's likely, but we do not know enough about the climate or how it interacts with the West Antarctica, to safely say that only a small part of it can come out of the sea during this century.