

Glacier

By Lennart Kiil



The Perito Moreno glacier in Patagonia, Argentina, flows down from the Andes and calves into the lake Lago Argentino.

Luca Galuzzi, www.galuzzi.it. CC BY-SA 2.5. [Wikimedia Commons](#).

A mass of ice that has become so heavy that it deforms and starts to slowly move.

The ice in glaciers makes up the largest reservoirs of fresh water on the planet, more than all the lakes and rivers combined. Today glaciers cover almost 10 percent of the world's land area. However, during the [ice ages](#) the glaciers covered 30 percent.

There are three types of glaciers. Alpine Glaciers are found on mountains, Tidewater Glaciers flow into the sea and give rise to icebergs and Continental Glaciers or Continental Ice Sheets cover very large areas on more level ground.

Today, Continental Glaciers are only found in Greenland and Antarctica. They are so large and contain so much water that if all the ice melted on Greenland, the sea level would rise with 6 meters, and if all the ice melted on Antarctica, the sea level would rise with an incredible 65 meters. Fortunately, not even the most pessimistic [climate models](#) predict that all the ice will melt.

The glaciers, however, are shrinking and melting throughout the world. In the European Alps, for instance, three percent of the ice is currently lost every year and scientists predict that all the glaciers in the Alps will have disappeared by 2050. The situation is similar in other places such as on the Kilimanjaro in Africa, the Andes in Peru and the Himalaya in Asia. Most experts agree that this melting is caused by [global warming](#).

Glaciers form and grow when snow falls during the winter. In the summer period some, but not all, of the snow melts, which results in the addition of a snow layer every year. As the years pass the ice gets thicker and thicker and at some point the ice sheet is so thick that its mass deforms the snow at the bottom and makes it behave a bit like a fluid. If the ice is on a slope then gravity will cause the glacier to move downhill. This movement, though, is very slow and not visible with the naked eye.

Usually glaciers move with a speed around 1 km per year, but the fastest glacier in the world, the Jakobshavn Isbrae on Greenland, moves with a speed of 12 km per year. The formation and growth of glaciers is also known as [glaciation](#).

Interestingly, glaciers are also found on Mars. The landscape on the Red Planet shows clear evidence of the movement of past glaciers and active glaciers have also recently been discovered on Mars.

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