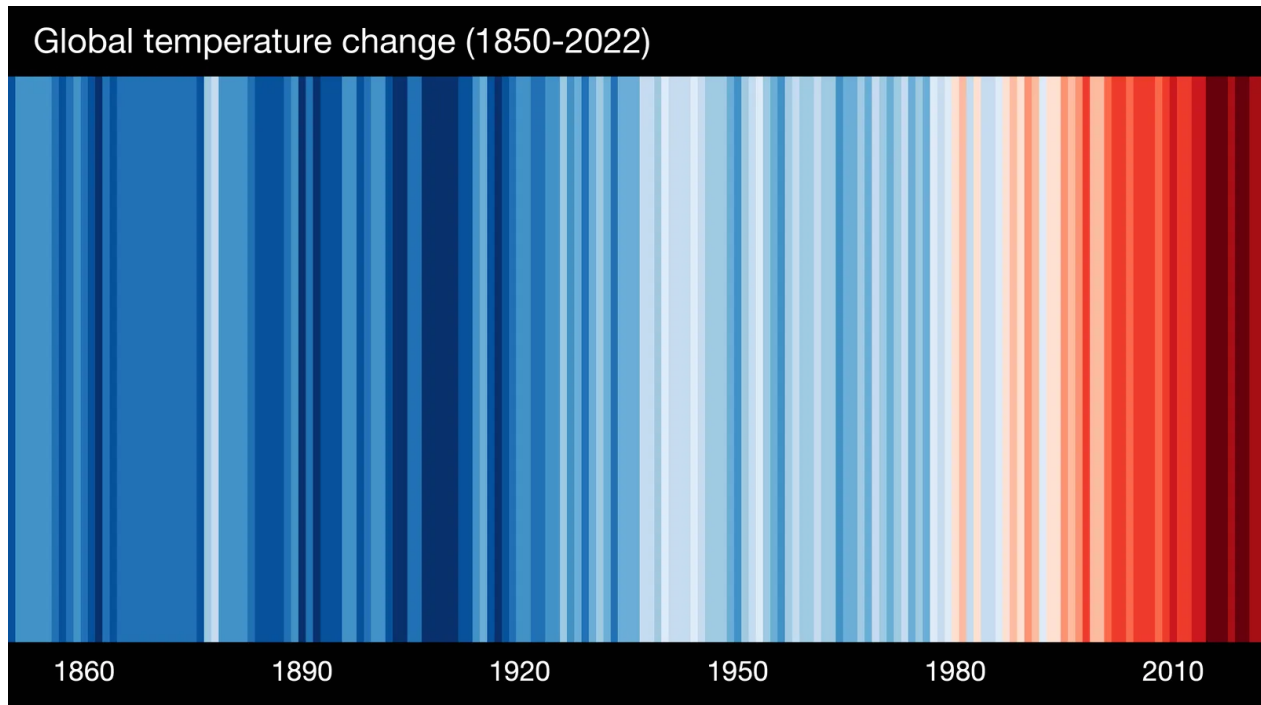


Global warming

By Lennart Kiil



Warming stripes: each stripe is one year's global mean temperature from 1850 to 2022. Blue is colder and red warmer than the 1971-2000 average.

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The warming of the oceans and of the [atmosphere](#) near the Earth's surface.

The [temperature record](#) based on direct measurements shows that the average global surface [temperature](#) has increased by 0.74 degrees Celsius during the last hundred years. Most of this increase has occurred since the 1970s. The record also shows that 11 of the 12 warmest years have occurred in the last 12 years.

The global surface temperature is based on temperature readings from several thousand weather stations, ships and lately also satellites. They reveal some regional differences in the temperature changes that have occurred. Warming has been strongest in the interior of Asia and in northern North America, while a few areas have actually cooled, including parts of the North Atlantic.

Generally recent warming (since 1970s) has been stronger over land than over the oceans, because the oceans can absorb more heat and lose it more easily by [evaporation](#). Since the Northern hemisphere has more land masses than the Southern hemisphere, warming occur faster here.

Although the temperature record for the atmosphere is not as extensive as for the surface, readings from weather balloons and satellites also show a rise in temperatures of the lower atmosphere (troposphere).

According to the [Intergovernmental Panel on Climate Change](#) (IPCC) the recent global warming trend is very likely caused by increased concentration of [anthropogenic greenhouse gases](#) in the atmosphere, mainly [carbon dioxide](#).

Man-made, [anthropogenic](#), global warming can be further enhanced by [positive feedback](#) mechanisms, such as increased water vapor in the atmosphere due to increased evaporation.

Scientists have, using [climate models](#), made predictions about future global warming trends. The models estimate that the global surface temperature will be between 1.1 to 6.4 degrees Celsius higher at the end of the 21st century. The predictions depend on the actual emission of greenhouse gases in the future, but all predict rising temperatures.

Global warming have negative effects including the melting of [glaciers](#), rising [sea levels](#), loss of [biodiversity](#) and more [extreme weather](#).

There is some [controversy](#) regarding global warming. Some argue that the warming trend is not man-made, or unprecedented, and some doubt that it even exists.

The terms "Global warming" and "[Climate change](#)" are sometimes used to describe the same thing, but they are in fact different. Whereas "Global warming" refers to increased global temperatures, "Climate change" describes several factors in addition to temperature, such as [precipitation](#) and wind.

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