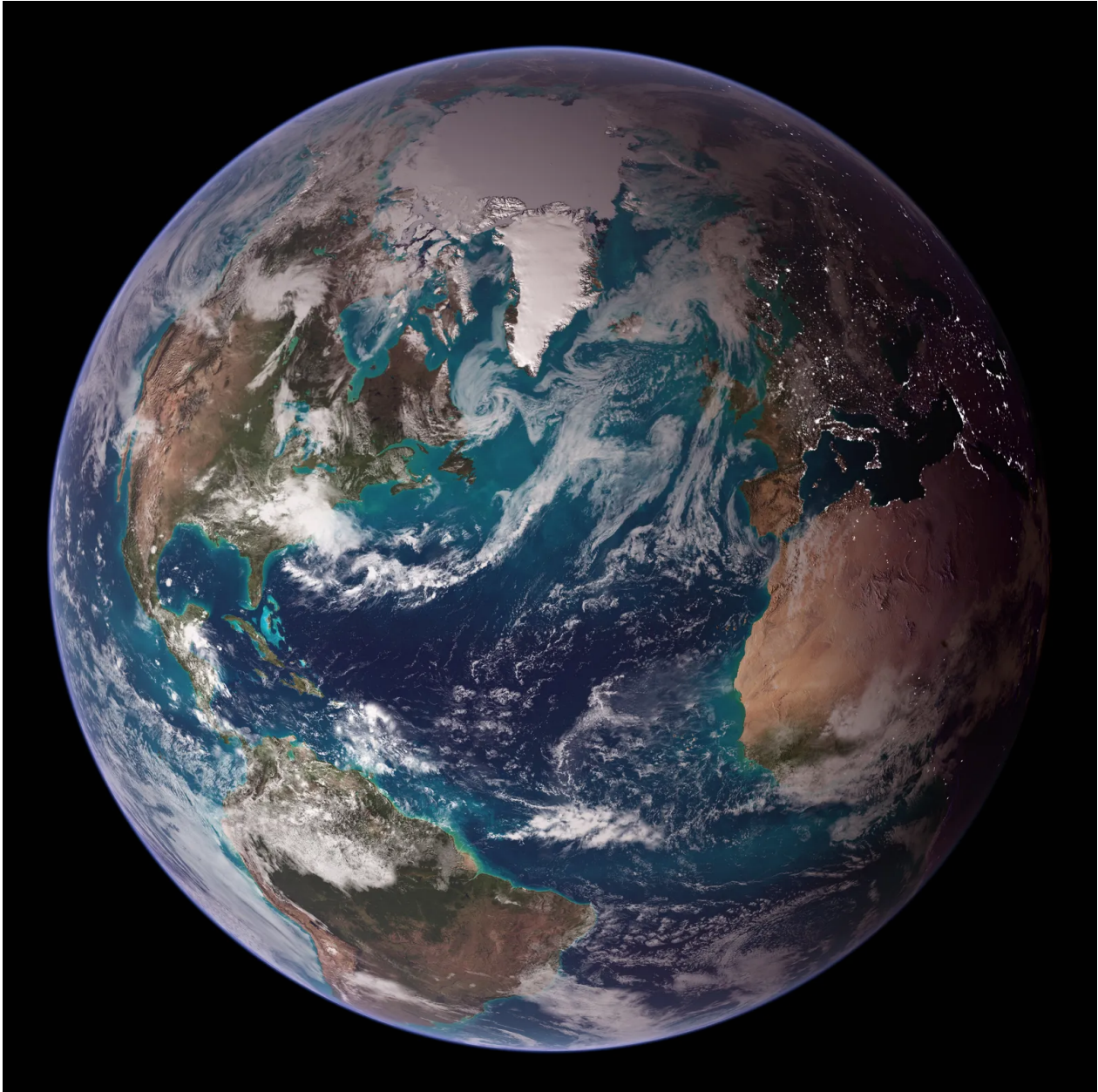


Negative feedback

By Lennart Kiil



The Earth seen from space. The clouds reflect a large part of the sunlight back into space. More clouds in a warmer climate can therefore act as a negative feedback.

NASA, Reto Stöckli (data from NASA and NOAA). Public domain. [Wikimedia Commons](#).

When a change in a system leads to a process that reduces that change.

Negative feedback can act as a stabilizing force in a system.

Body temperature regulation is one type of negative feedback. If the body temperature of a human increases during exercise, or by being in a hot environment, sweat is produced and blood is redirected to the skin. This reaction helps cool the body back to its optimal temperature.

Negative feedback processes may also exist for the climate on Earth. [Global warming](#) makes more water evaporate into the [atmosphere](#). The higher concentration of [water vapor](#) increases global warming even more, as it is a [greenhouse gas](#). However, this process, which is a [positive feedback](#), may also start a negative feedback. If the water vapor increases the number of clouds, these could reflect more of the [sunlight](#) and reduce the [temperature](#).

Another potential negative feedback effect, which could help reduce the effect of global warming, is increased absorption of CO_2 by plants during [photosynthesis](#). The [hypothesis](#) is that the increased content of CO_2 will act as a fertilizer, and increase the growth rate of plants. More carbon would then be removed from the atmosphere, and stored in the plants.

Algae in the oceans could create a similar negative feedback by increased growth as surface waters get warmer and more CO_2 is available.

In connection with global warming, negative feedback mechanisms generally reduce the negative impacts, whereas positive feedback makes them worse.

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