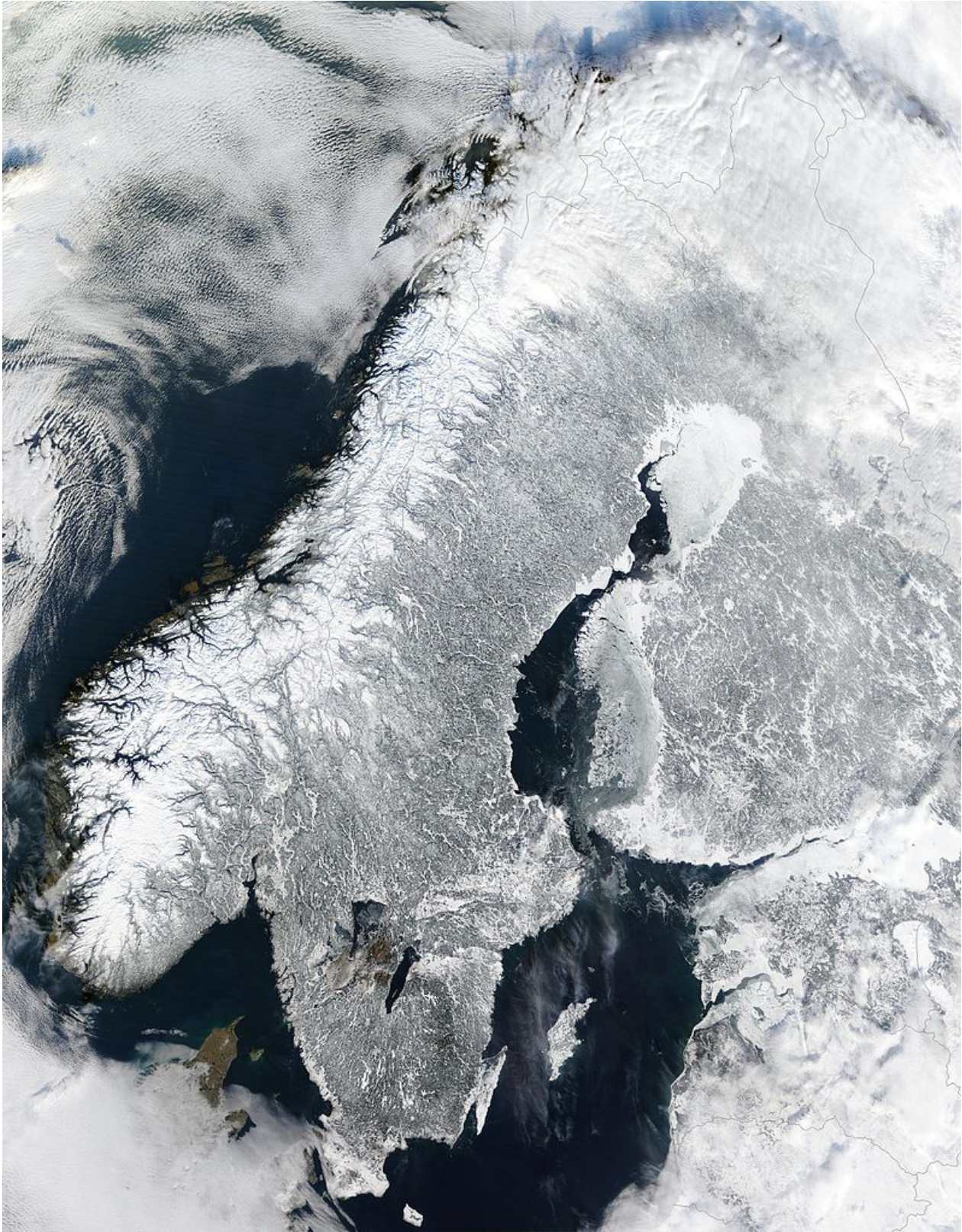


Albedo

By Lennart Kiil



A snow-covered Scandinavia has a higher albedo than the surrounding sea.

[NASA](#), Public domain.

The fraction of sunlight an object or material reflects.

Albedo measures what part of the sunlight hitting an object is reflected. The albedo for a material is between 0 and 1. When no light from the sun is reflected, the object has an albedo of 0. When all the sunlight is reflected, the object has an albedo of 1.

Most materials and objects have an albedo somewhere between 0,1 and 0,9. Often the amount of reflected light is given in a percentage. When half the light falling on an object is reflected, the albedo is said to be 50 percent, corresponding to 0,5.

The word albedo means white in Latin. When a material has an albedo near 1 it will appear white to humans. When the albedo is near 0 the object will appear black because not no light is reflected.

Snow has an albedo of 0,9 or 90 percent. Charcoal an albedo of 0,04 or 4 percent.

The average albedo of Earth's surface is 30 percent. The number is changing because of human activities. This change is relevant to climate change and global warming.

[Deforestation](#) and farming are human activities that have directly changed the albedo in some areas of the world.

An important mechanism for changes in albedo is the snow-temperature [positive feedback](#). When a snow-covered area warms, some of the snow melts. Less snow means that less sunlight is reflected which leads to higher temperatures. This again leads to more snow melting away.

This is also referred to as a warming cycle and contributes to [arctic amplification](#)

Because of more sunlight, also called higher [insolation](#), the albedo effect is more pronounced in tropical regions, where even small changes in albedo can cause relatively big changes in temperature.

Clouds and the amount of cloud forming are important factors in climate change because clouds reflect much more sunlight than the Earth's surface.

Depending on the type and the altitude, clouds can contribute both to warming through the greenhouse effect [greenhouse effect](#) and cause lower temperatures by reflecting incoming sunlight. [Aerosols](#) behave in a similar manner.

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