

Adaptation

By Lennart Kiil



The Arctic fox is adapted to life in the Arctic with a thick, white winter coat that keeps it warm and hides it in the snow.

Jonatan Pie. [CC0. Wikimedia Commons](#).

Process by which an organism tracks its environment over generations.

For adaptation strategies for dealing with global warming, see [adaptation to global warming](#).

Because [climate change](#) fundamentally alters the environment, the ability of living organisms to change with the environment is important.

Some organisms are very vulnerable to climate change. The most vulnerable organisms are the large ones, because they have longer life spans and, therefore, evolves slowly.

Smaller organisms have an advantage with their shorter life spans because they have more generations during a specific timespan. This means they can quicker change to fit the environment. However, bigger organisms can better deal with changes in temperature within one life time because their larger body size protects them somewhat against changes in the environment. This process of change at the physiological level is called acclimatization.

Immobile organisms are also more at risk because they cannot move to colder regions when the [temperature](#) rises because of [global warming](#).

If animals and plants are not able to adapt to climate change they will either [migrate](#) or die. If they migrate then environmental change alters the local [biodiversity](#). When whole populations become extinct the biodiversity is irreversibly reduced.

Humans are a special case when it comes to adaptation. Humans, like all living organisms, must adapt to nature, but humans can and do adapt through changing their local environment by building shelters, which reduce the effects of the environment for the individual.

A good example of adaptation is that of the peppered moths. Originally, the vast majority of peppered moths had light coloration, which effectively camouflaged them against the light-colored trees they rested upon. When trees became darker due to pollution during the [industrial revolution](#), the moth adapted by natural selection. They also became dark so they could still be camouflaged in the new environment of darkened trees.

How to cite this entry

Lennart Kiil: "Adaptation". Climate Encyclopedia, climate-encyclopedia.com/adaptation, retrieved 24 October 2026.

Climate Encyclopedia is free and needs no login.