Polar Regions

The ends of the earth

Bitter cold winds whip the earth's polar regions, the Arctic in the north and the Antarctic in the south.

The core of the Arctic is a great ocean - the Arctic Ocean - parts of which are covered all year round by ice that drifts about the North Pole. The Arctic Ocean has many thousands of big and small islands and is almost surrounded by land: the northern parts of Europe, Asia and North America.

The Antarctic is an isolated continent surrounding the South Pole. Most of Antarctica's land lies beneath ice and snow almost 2km thick. It has high mountains and glaciers and is the coldest, driest and windiest continent on Earth.

These regions are very cold: the coldest temperature ever known on earth (-89°C or -129°F) was recorded in Antarctica. The average winter temperature in the Arctic is about -30°C. The short Arctic summer can be relatively warm, however, especially on the coastal firnges of the Arctic Ocean. It gets warm enough for people living within some parts of the Arctic circle to grow vegetables.

Antarctica – the coldest place on earth

The continent of Antarctica, 98% of which is covered with snow and ice, covers more than 13 million sq. km – an area bigger than the United States!. Despite the freezing temperatures, it gets very little snow - only a few cm of new snow falls each year. The interior of the continent is, in fact, a cold desert almost devoid of life except for a few lichens and mosses that cling to rocks. In winter, the seas surrounding Antarctica freeze into solid pack-ice that covers an area almost as big as the continent itself.

Further information

- Arctic environment and conservation
- Tundra Ecoregions
- Antarctic Connection

Why is Antarctica so Cold?

Unlike the Arctic region, Antarctica is a continent surrounded by an ocean which means that interior areas do not benefit from the moderating influence of water.

With 98% of its area covered with snow and ice, the Antarctic continent reflects most of the sun's light rather than absorbing it.

The dryness of the air causes heat radiated back into the atmosphere to be lost instead of absorbed by the water vapor in the atmosphere.

During the winter, the size of Antarctica doubles as the surrounding sea water freezes, effectively blocking heat transfer from the warmer surrounding ocean.

Antarctica has a higher average elevation than any other continent on Earth which results in even colder temperatures.

Arctic lands

The lands surrounding the Arctic Ocean support a greater variety of plants as the summers are warmer than in the Antarctic. Everywhere just under the surface of the soil is a frozen layer of soil called 'permafrost'.

Because water cannot drain away through the permafrost, there is plenty of surface water. Large trees do not grow here; instead there are huge areas of swampy plains with low-lying bushes and grasses called 'tundra' or 'muskeg'. Flowering plants such as the Arctic poppy bring a surge of yellow to the tundra in the summer. Reindeer moss also grows in abundance.

Conservation work

WWF has helped the government of Russia to develop several new protected areas in the Arctic, including one of the largest protected areas in the world, the Great Arctic Reserve. The Reserve covers 46,000 sq. km of the vast Taimyr Peninsula and is home to 700,000 wild reindeer, as well as other Arctic animals like polar bears and seals.

In the Antarctic, WWF has joined other conservation organisations in urging that Antarctic wildlife be given special protection. In 1994 the whole of the Southern Ocean, the huge ocean that surrounds Antarctica, was declared an international whale sanctuary.