

Geography

Climate

The climate in a particular part of the world will influence its vegetation and wildlife, so is fundamental to life on Earth. Find out about factors influencing weather and climate and how to interpret climate data.

Weather and climate

Weather describes the condition of the atmosphere. It might be sunny, hot, windy or cloudy, raining or snowing. Climate means the average weather conditions in a particular location based on the average weather experienced there over 30 years or more. Global climate zones with similar *flora*



Sunny weather in Hyde Park, London

[**flora**: All the different types of plant species that live in a specific area.], *fauna* [**fauna**: All the different types of animals that live in a specific area.] and climate are called **biomes**.

The weather takes into account the *temperature* [**Temperature**: How hot or cold something is, for example the atmosphere or the sea.], *precipitation* [**precipitation**: Moisture that falls from the air to the ground. Includes rain, snow, hail, sleet, drizzle, fog, and mist are also precipitation.], *humidity* [**humidity**: The amount of water vapour in the atmosphere measured as a percentage.] and *atmospheric pressure* [**atmospheric pressure**: the weight of air resting on the Earth's surface.] of the part of atmosphere (air) closest to the surface of the earth.

The weather is constantly changing as temperature and humidity change in the atmosphere. Landmasses, such as the British Isles, experience constantly changing weather conditions.

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rather than the actual conditions. It is possible for the weather to be different from that suggested by the climate.

Climatic conditions in an area can be affected by the landscape, relief and activities taking place (both human and natural). Climate can alter over time and space.

Within a climatic region, the climate may vary from place to place - eg the top of a hill, the sunny side of a hill, the shaded side of a hill and the bottom of a hill. These areas with their small variations are called microclimates.

The science of monitoring and studying the atmosphere and predicting its weather and climate is called **meteorology**. People who study the weather and climate are known as meteorologists.

Global distribution of climates

Climates are influenced by many factors, such as proximity to the equator or the poles and proximity to the sea, as well as things like ocean currents, atmospheric pressure belts and *prevailing winds* [**Prevailing wind**: *The wind direction that occurs most often throughout the year, or occurs most often at this time of year, in a certain geographical region.*].

A place's climate influences the types of vegetation and animals that live there. It is possible to divide the world into a number of climatic zones or *biomes* [**biome**: *A large-scale ecosystem.*], each with their own characteristic climate, vegetation and wildlife.

Learn more about **the world's nine major biomes** and view an animation of their distribution throughout the world.

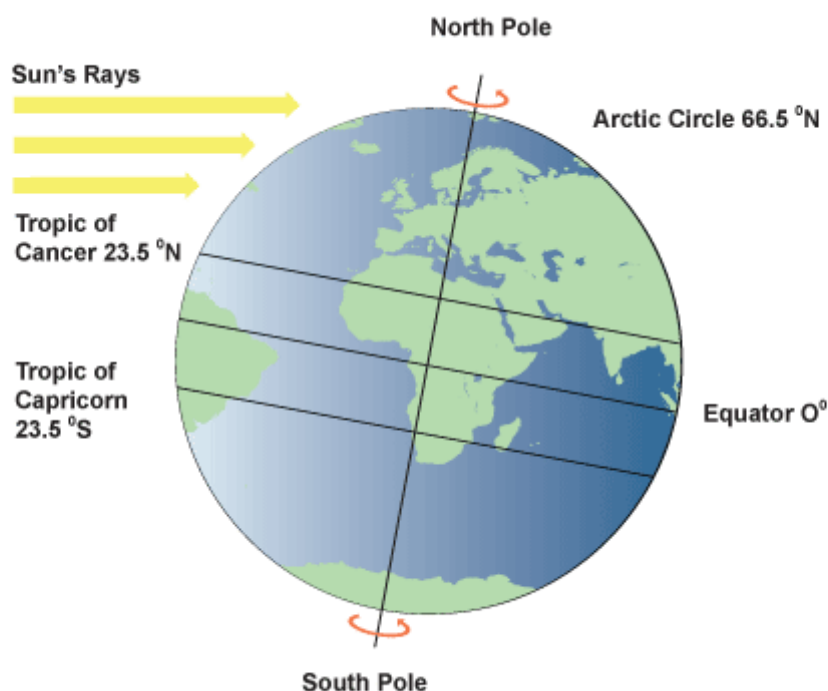
Factors affecting climate

Latitude or distance from the equator

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to the curvature of the earth. In areas closer to the poles, sunlight has a larger area of atmosphere to pass through and the sun is at a lower angle in the sky. As a result, more energy is lost and temperatures are cooler.

In addition, the presence of ice and snow nearer the poles causes a higher *albedo* [**albedo**: *A measure of how much sunlight a surface reflects.*], meaning that more solar energy is reflected, also contributing to the cold.



The effect of the Sun's rays

Altitude or height above sea level

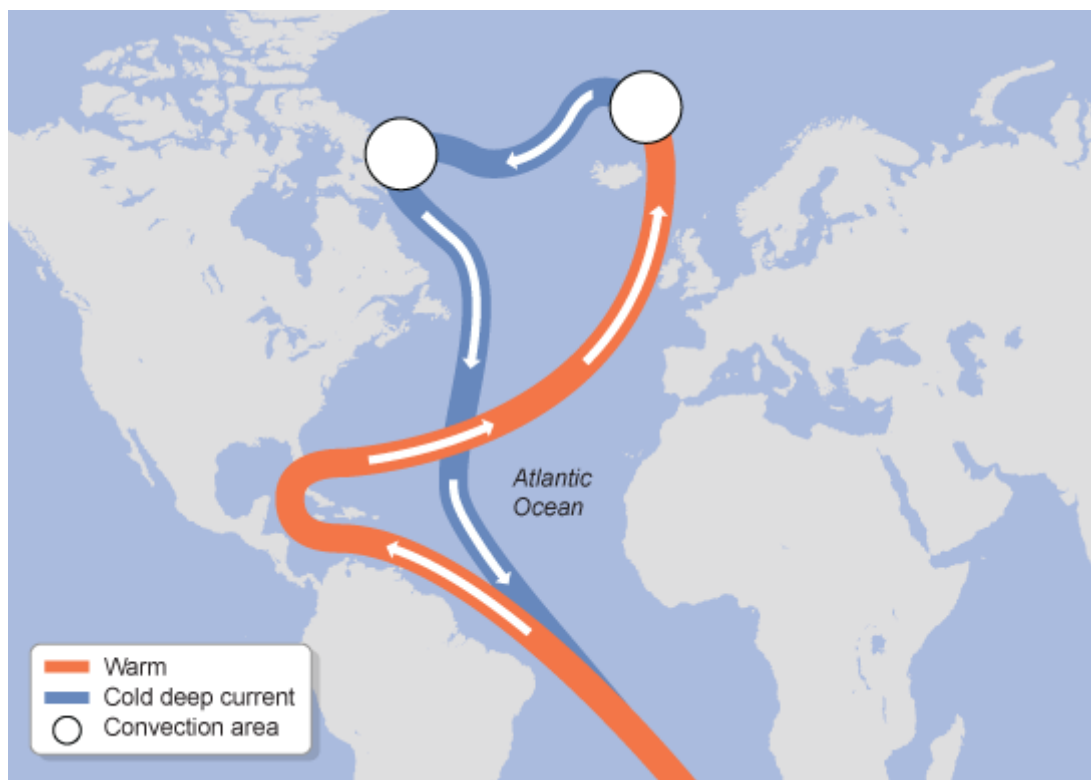
Locations at a higher altitude have colder temperatures. Temperature usually decreases by 1°C for every 100 metres in altitude.

Distance from the sea

Oceans heat up and cool down much more slowly than land. This means that coastal locations tend to be cooler in summer and warmer in winter than places inland at the same latitude and altitude. Glasgow, for example, is at a similar latitude to Moscow, but is much milder in winter because it is nearer to the coast than Moscow..

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Britain has a **maritime climate**. A warm ocean current called the **North Atlantic Drift** keeps Britain warmer and wetter than places in continental Europe.



The North Atlantic Drift

Prevailing wind

The prevailing wind is the most frequent wind direction a location experiences. In Britain the prevailing wind is from the south west, which brings warm, moist air from the Atlantic Ocean. This contributes to the frequent rainfall. When prevailing winds blow over land areas, it can contribute to creating desert climates.

UK climate

The British Isles have variable weather that changes from day to day between different regions and within different regions. Consequently it is very difficult to predict or forecast the weather.

Britain has four distinct seasons of fairly equal length - spring, summer, autumn and winter. In winter it is colder and wetter and the days are shorter than in summer.