

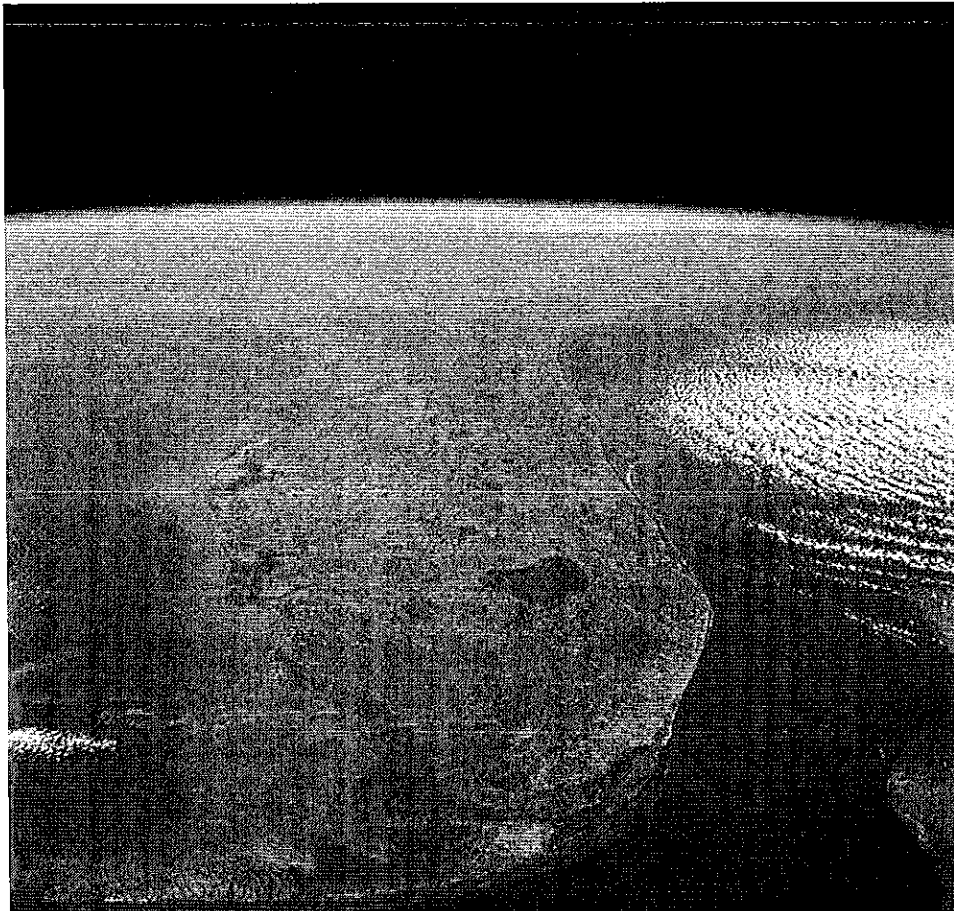
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CLIMATE PATTERNS: LARGE BODIES OF WATER

Predicting Climate

Imagine you are choosing a place to settle down and build a secure compound during the zombie apocalypse. How would you be able to tell what the climate was going to be? Since climate is the average weather over a long period, you couldn't really wait for a long time to see what the climate was. There are some clues that you could use to predict what the climate of a location is, helping you to decide if it is somewhere you want to stay long term.

Large bodies of water moderate the temperatures. Areas inland reach higher highs and lower lows. Water changes temperature less than land when it absorbs heat. This means that large bodies of water change temperature very little. Maritime climates are areas that are near large bodies of water. The temperatures of maritime climates are kept pretty moderate by the relatively steady temperatures of the bodies of water. Continental climates are climates that are not close to large bodies of water. They tend to have more extreme high or low temperatures than maritime climates. Maritime climates also tend to have a fair amount of humidity, due to being close to water.

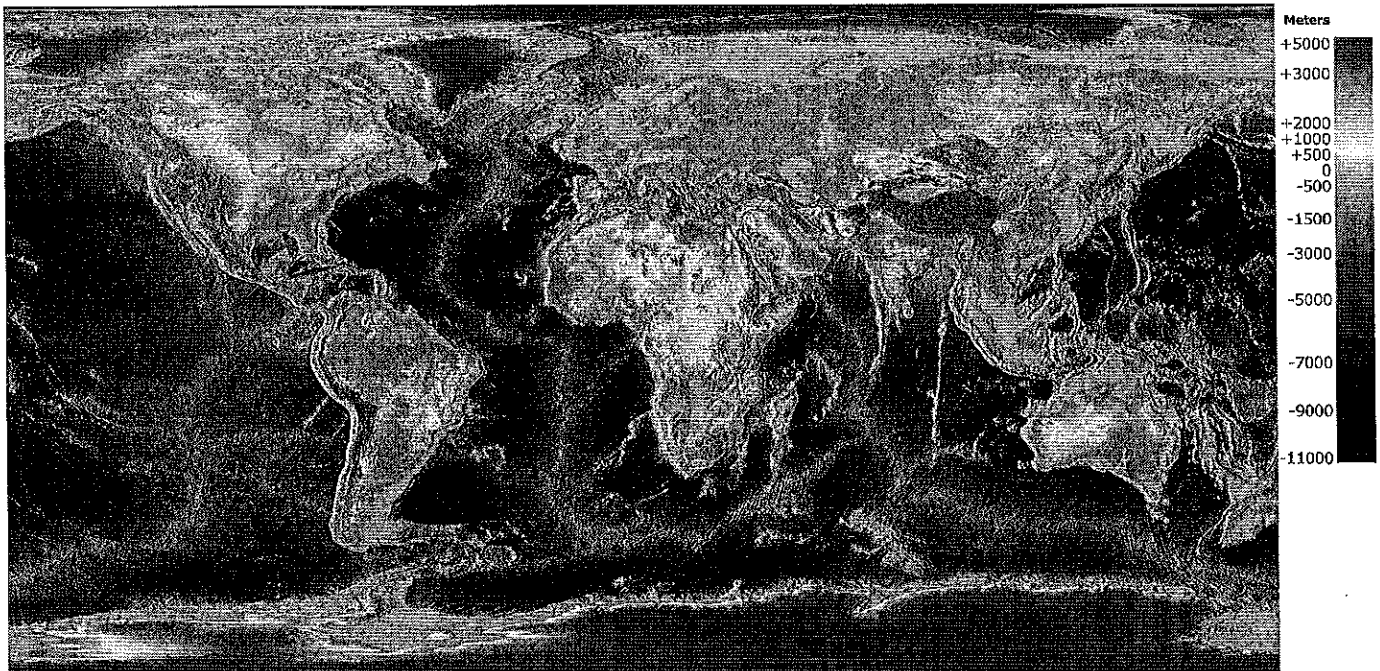


CLIMATE PATTERNS: ELEVATION

Predicting Climate

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The elevation or height from sea level has an effect on the climate. As air rises it expands and becomes cooler. On average, air cools 4 degrees Fahrenheit every 1000 feet of elevation. It is common that mountains can be so tall that they have snow year round, even in the tropics. For example, Mt. Kilimanjaro is very near the equator and has snow at its peak year round.



CLIMATE PATTERNS: LATITUDE

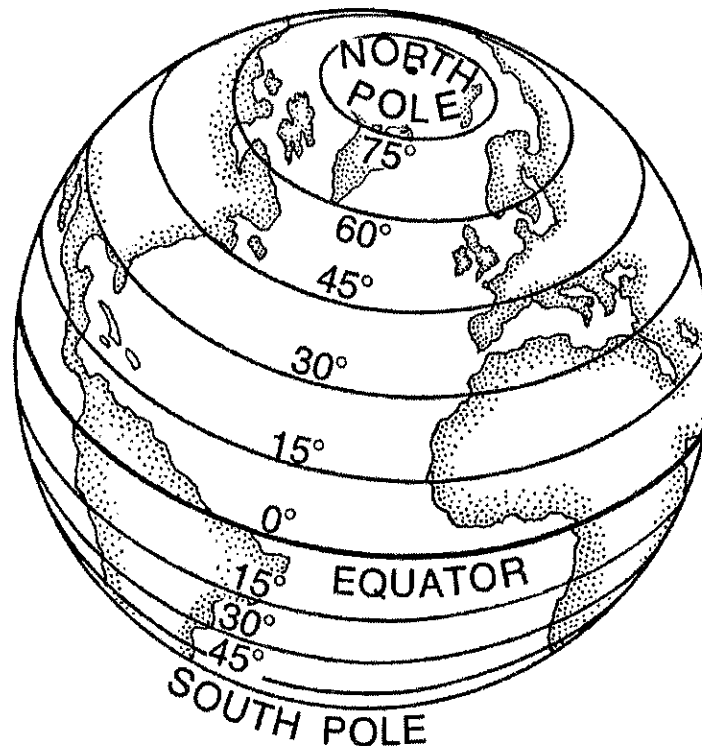
Predicting Climate

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By knowing the latitude of a location, you can tell something about its climate. Latitude measures the distance north and south on the Earth surface. The equator is at 0 degrees. The North Pole is at 90 degrees north and the South Pole is at 90 degrees south. Sunlight hits the earth most directly between 23.5 degrees north (Tropic of Cancer) and 23.5 degrees south (Tropic of Capricorn). The area in between these latitudes is called the tropics and the energy from the sun stays pretty much the same all year. There is very little change in the seasons throughout the year. The weather is always warm in the tropics, unless you are at a higher elevation such as a mountain.

The mid-latitudes are from 23.5 degrees to 60 degrees. These areas have cooler winters and warmer summers. These areas are also called "temperate" because they are not extremely hot or cold.

The polar latitudes are the latitudes above 60 degrees. These areas get the least energy from the sun and have cooler temperatures all year round. However, the summer is often much warmer than the very cool winters.

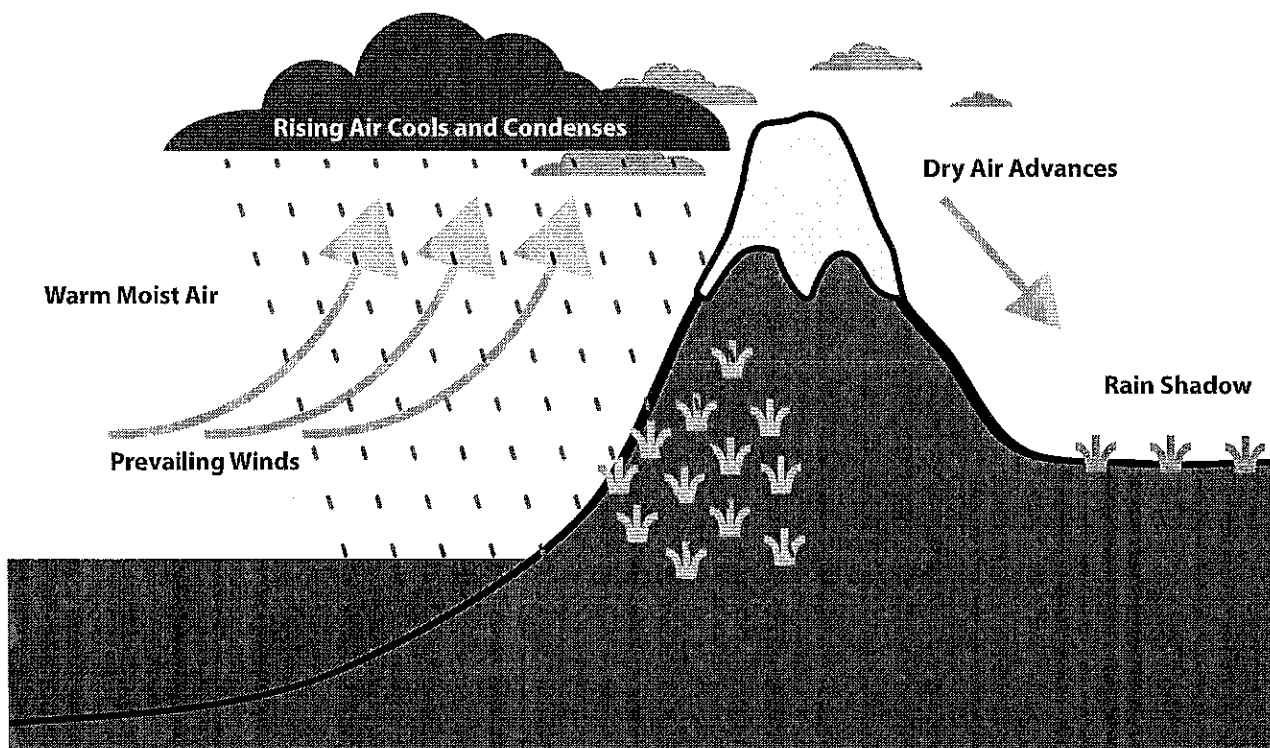


CLIMATE PATTERNS: MOUNTAIN RANGES

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Nearby mountain ranges have an effect on the climate. A mountain range can act like a rain barrier and cause what is called a "rain shadow." Clouds which have been collecting precipitation reach a wall of mountains, causing the clouds to release rain. The other side of the mountain range is blocked from rain clouds and receives drier air. Washington state is a good example of this process. Western Washington, including Seattle, is rainy, while east of the mountains, Eastern Washington is much drier.

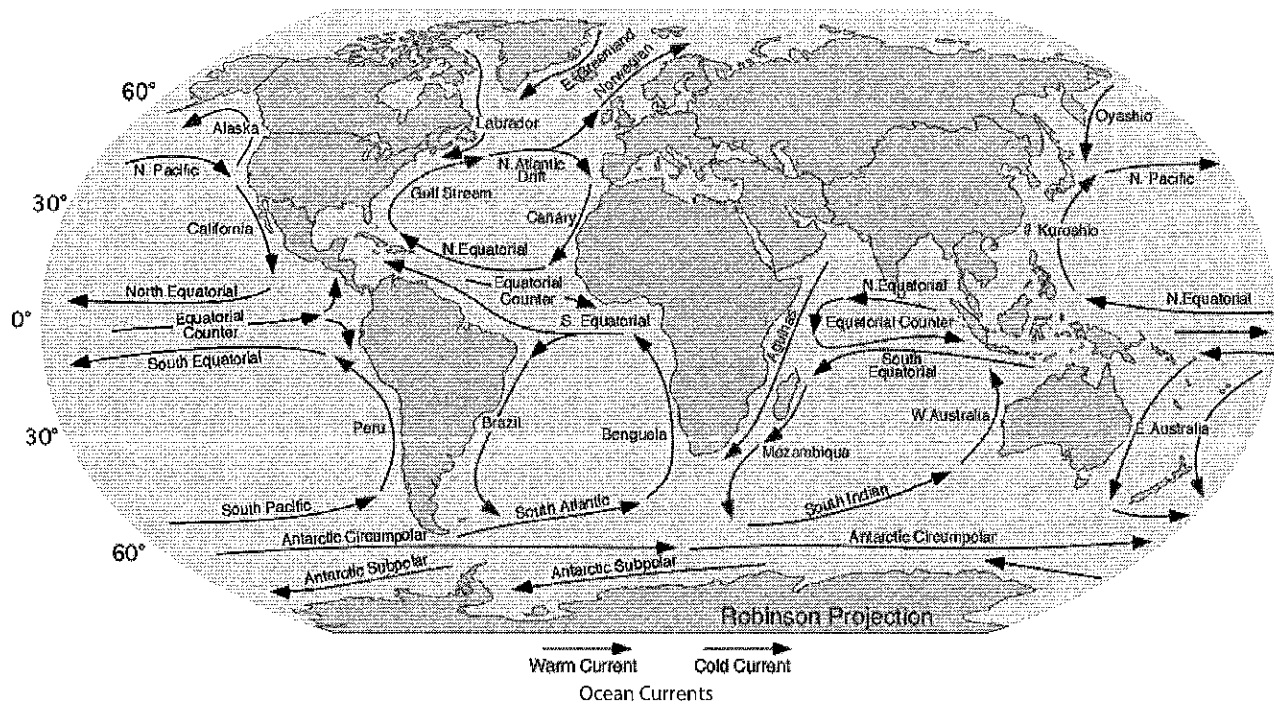


CLIMATE PATTERNS: OCEAN CURRENTS

Predicting Climate

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Ocean currents are continuous movement of ocean water in a direction. There are many factors that contribute to the directions of the ocean currents, but they stay pretty consistent. The movement of this water can be over a very long distance and even act like a conveyor belt as it delivers temperatures. For example, the Gulf Stream circulates from West Africa, to Florida, and then up to Northern Europe. The warm currents from the Gulf Stream make northwest Europe much warmer and livable than other locations at the same latitude. Without these ocean currents, Great Britain would be much colder.



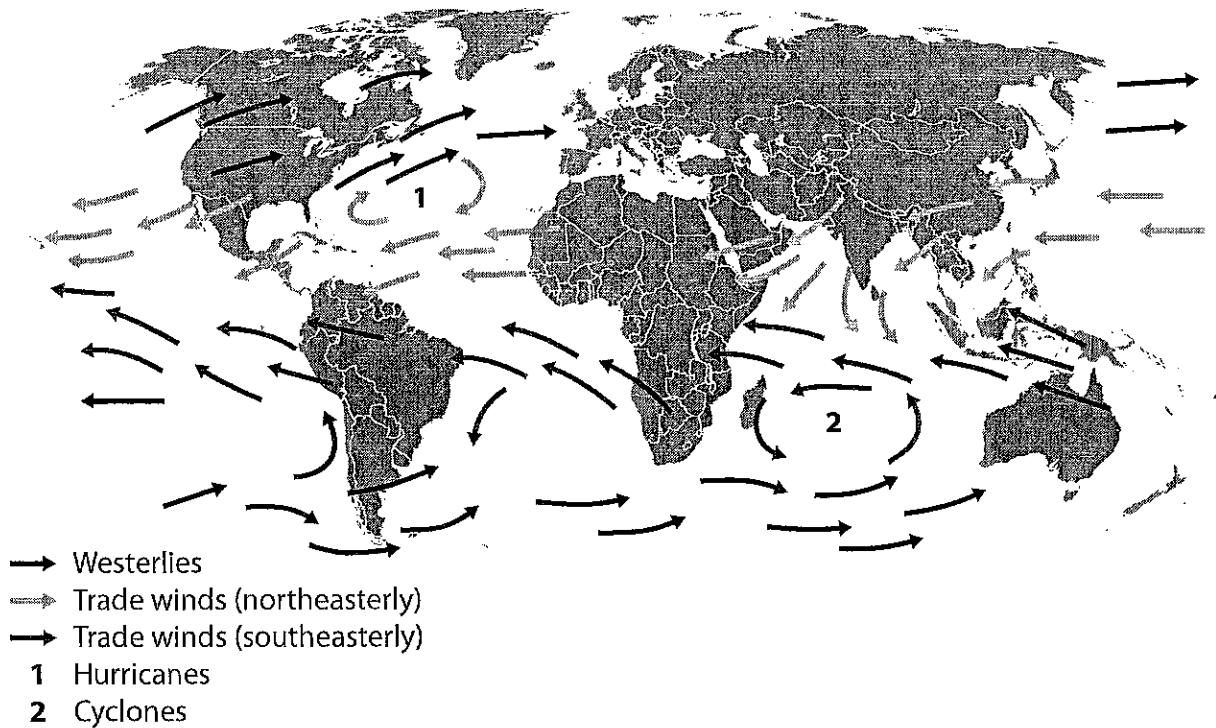
CLIMATE PATTERNS: PREVAILING WINDS

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Prevailing winds are the direction that winds typically come from for a location. Where the prevailing winds come from affects the climate of a location. For example, California receives its prevailing winds from the west, off of the Pacific Ocean. The winds off of the Pacific Ocean are a fairly stable temperature. In New York, the prevailing winds come from inland areas in the west. These temperatures change a lot more. This causes New York's temperatures to be less consistent than California's.

Map of prevailing wind patterns



CLIMATE PATTERNS: VEGETATION

Predicting Climate

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Climate determines what vegetation, or types of plants, there will be in a location. Soil type also makes a difference. Some plants can only exist in some climates. However, climate is also somewhat determined by the vegetation. Large forests have an effect on the climate because they can slow winds, absorb water, and absorb heat from the sunlight. Forests and plants can slow down surface winds and also help keep soils from eroding or blowing away. Plants and roots will also capture precipitation creating a more humid climate. Thick vegetation, such as a forest will hold in cool air during the day and slow down the release of warm air at night. Dense forests tend to be more humid and have moderate temperatures than places without vegetation.

