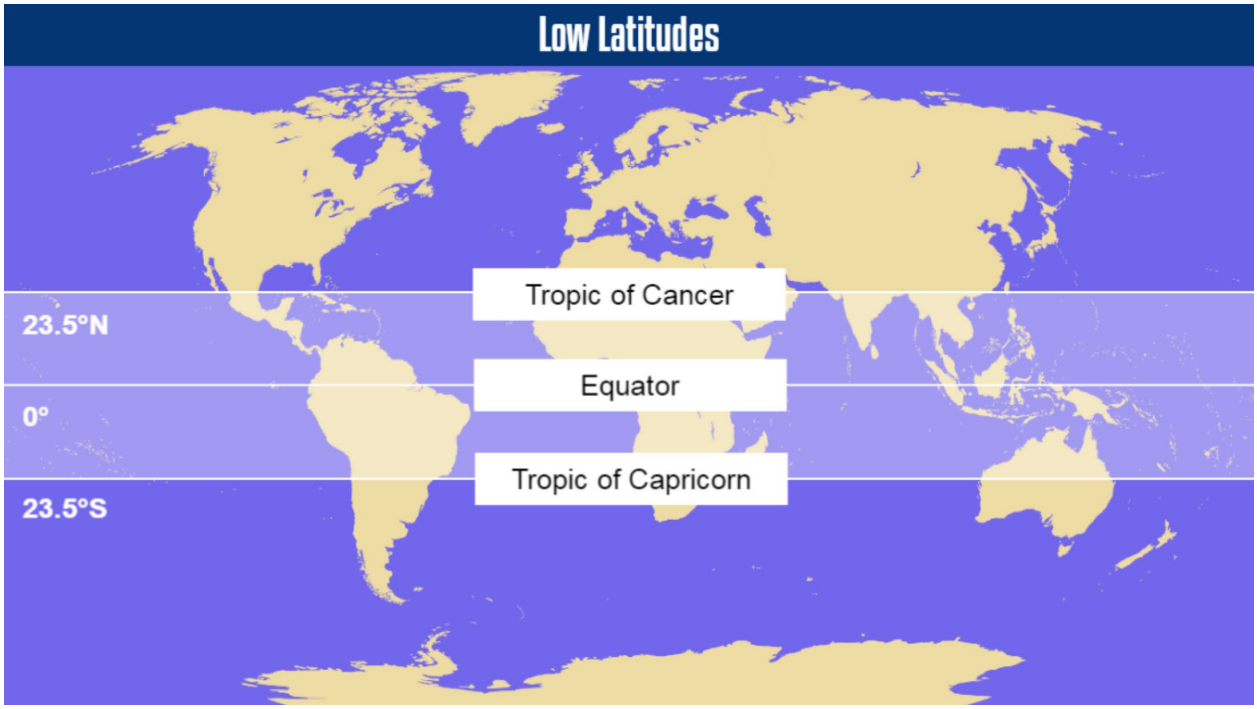
Module: Physical Geography
Topic Content: Climate and Vegetation Regions

Climate and Vegetation Regions

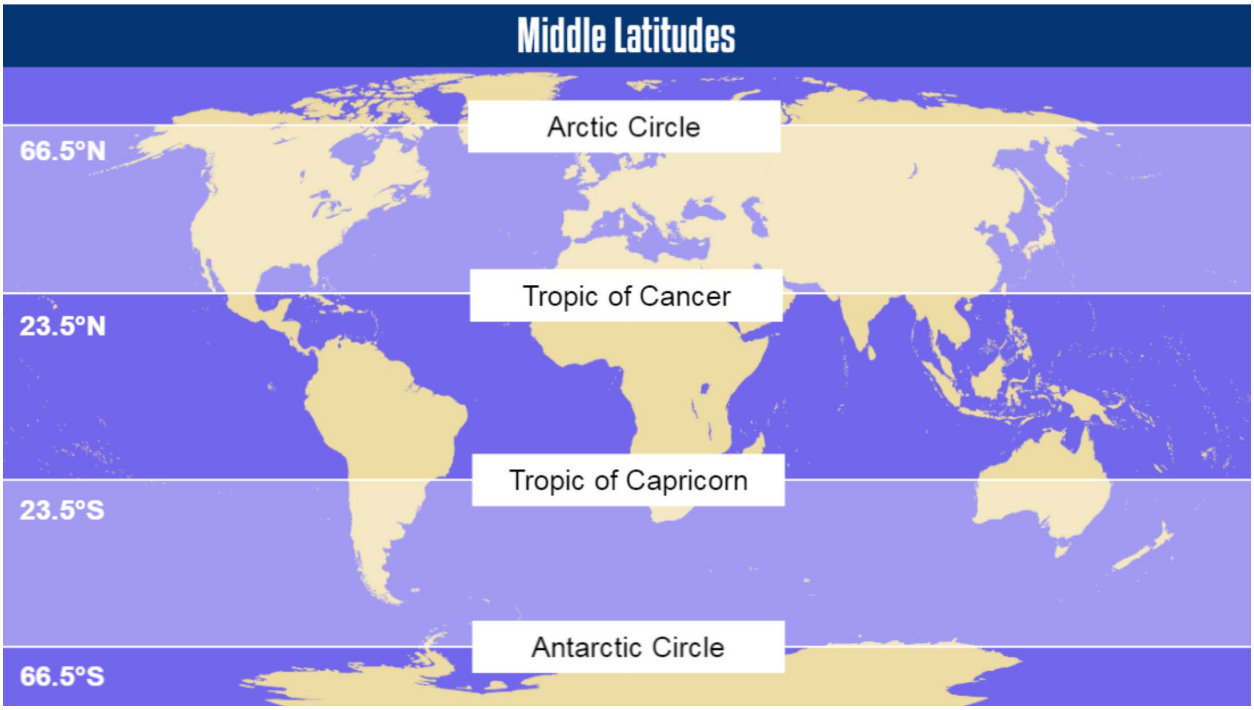
Click next to begin.

Low Latitudes



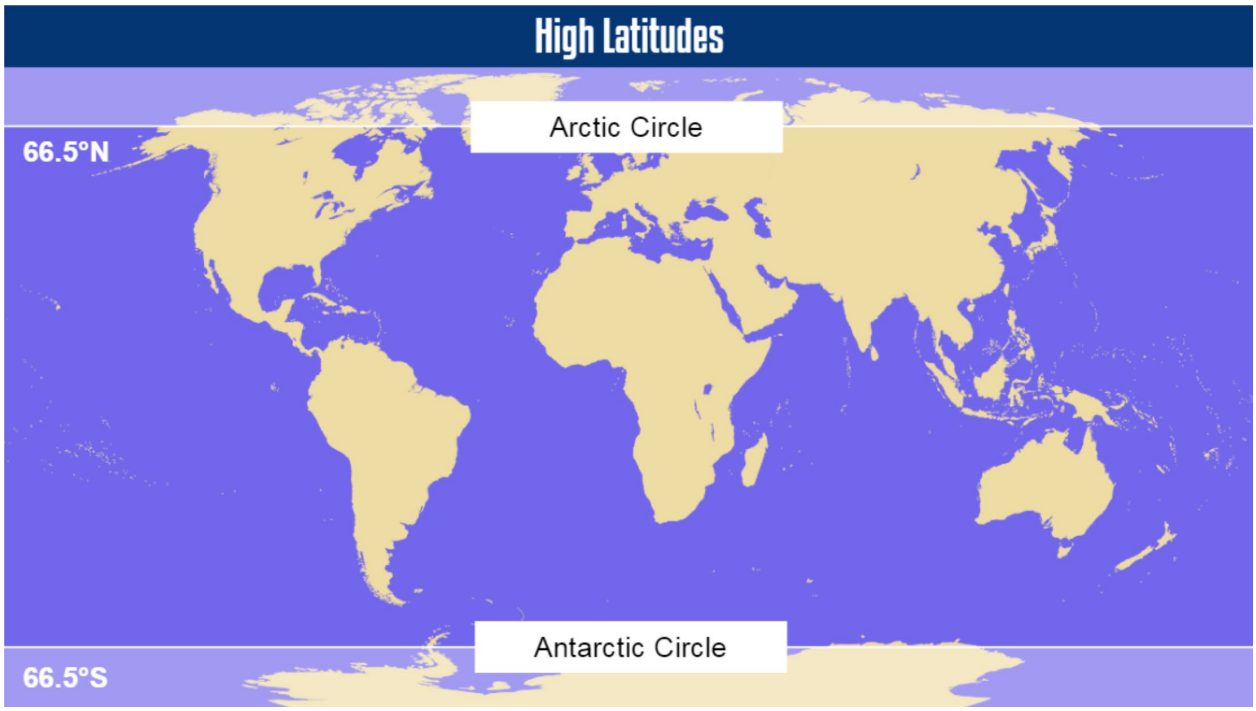
Geographers are able to make generalizations about a location's climate based on its latitude. Areas near the equator are generally hot year-round. These areas are called the low latitudes, because they fall within the lowest lines of latitude. The low latitudes extend from the equator to 23.5° North latitude and to 23.5° South latitude. These circles of latitude are known as the Tropic of Cancer and the Tropic of Capricorn. The locations within these latitudes are commonly referred to as "The Tropics."

Middle Latitudes



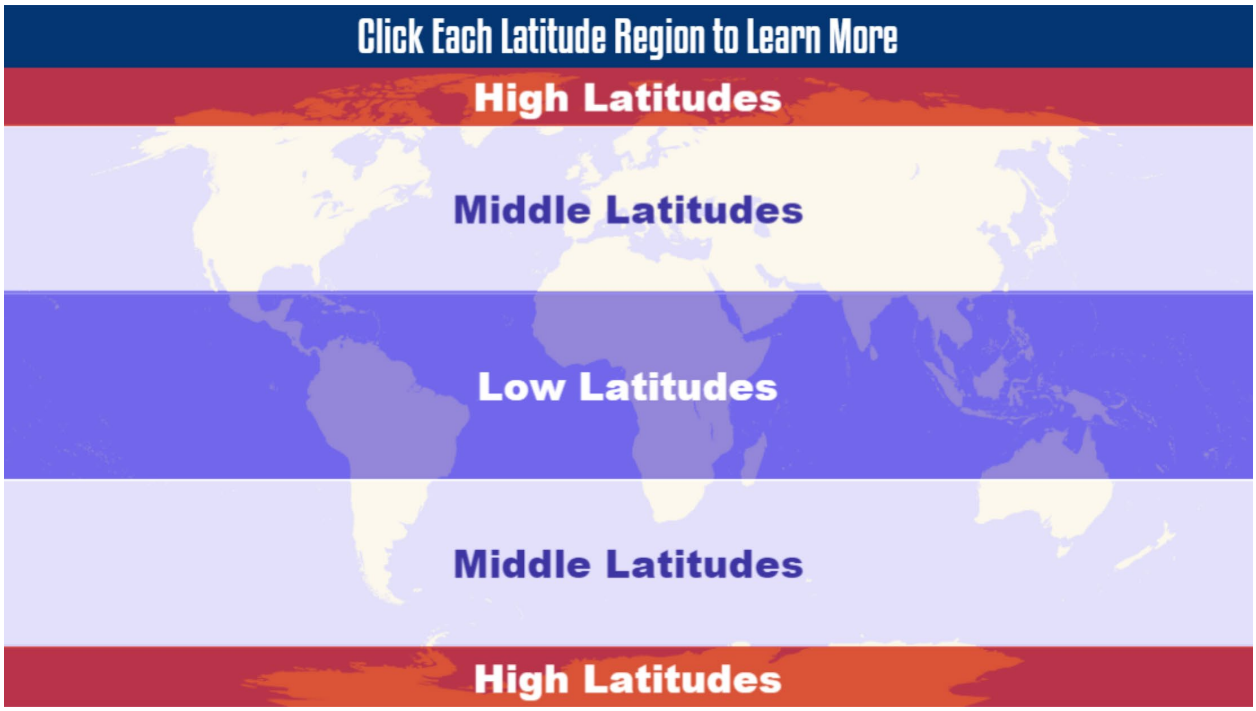
The middle latitudes in the Northern Hemisphere lie between the Tropic of Cancer and the Arctic Circle, which are located at 23.5°N and 66.5°N, respectively. The middle latitudes in the Southern Hemisphere lie between the Tropic of Capricorn and the Antarctic Circle, which are located at 23.5°S and 66.5°S, respectively. These latitudes generally have temperate climates, and do not experience extreme cold or extreme heat. The temperature varies throughout the year, and is warmer in the summer and cooler in the winter.

High Latitudes



The high latitudes are the areas north of the Arctic Circle, which is located at 66.5°N, and south of the Antarctic Circle, which is located at 66.5°S. As you might expect, these latitudes tend to have cool or cold temperatures all year.

Climate and Vegetation Regions

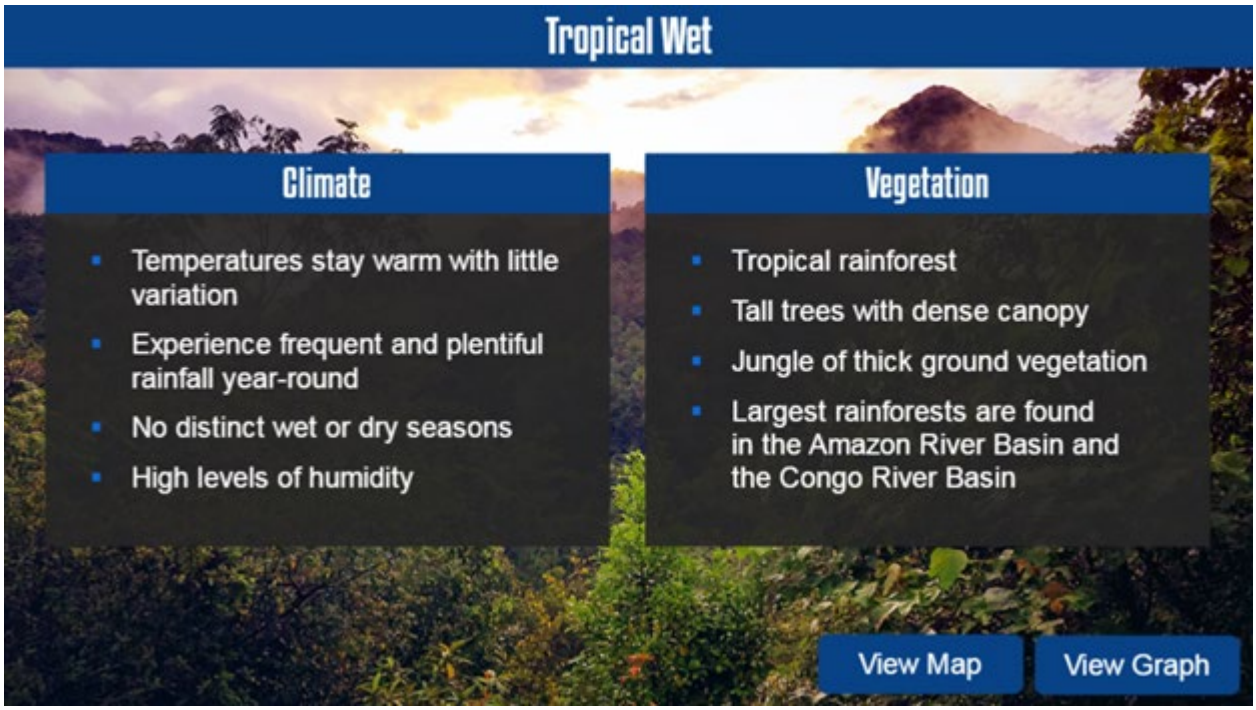


There are specific climatic regions located within the low, middle, and high latitudes. Click each latitude region to learn more.

Low Latitudes: Climate and Vegetation

Click each image to learn more.

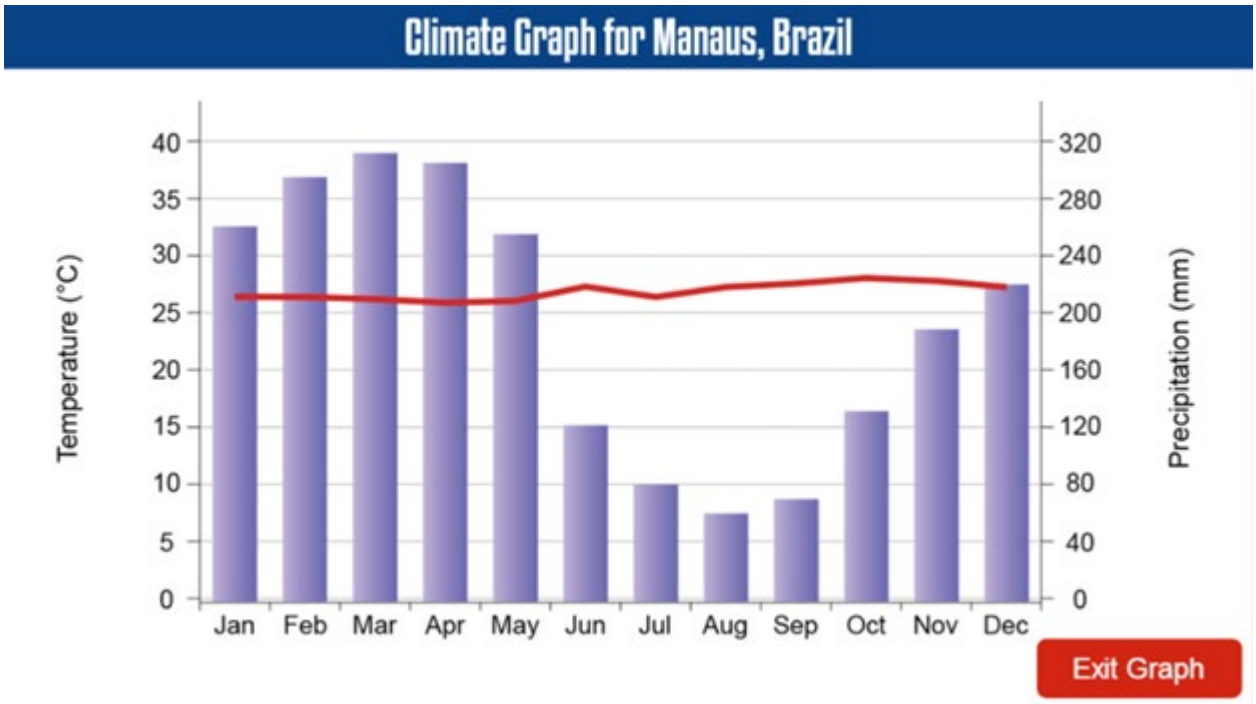
Low Latitude Climate: Tropical Wet



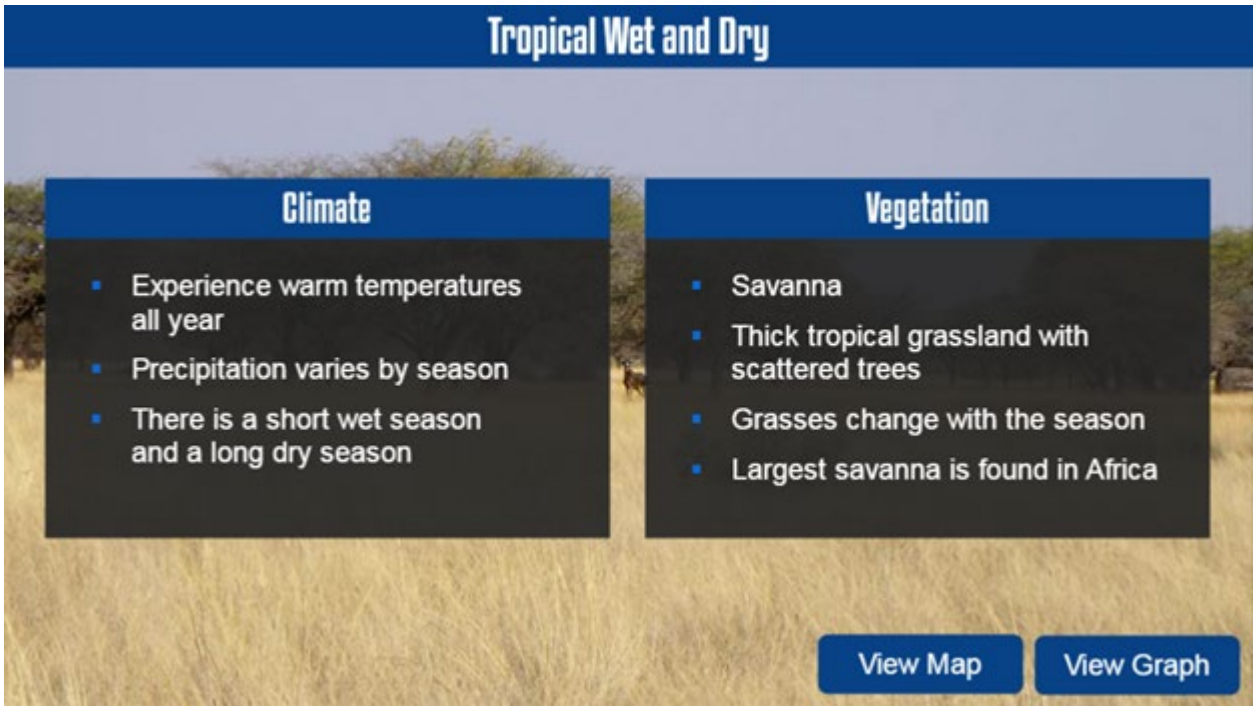
The tropical wet climate region is typically located along the equator, which means it receives direct sunlight all year. This allows the temperatures to stay warm with little variation. Tropical wet climates experience frequent and plentiful rainfall year-round. There are no distinct wet or dry seasons, and the amount of moisture leads to high levels of humidity.

The tropical rainforest is the vegetation region most commonly associated with this climate. A tropical rainforest is characterized by tall trees that form a canopy so dense it almost entirely prevents sunlight from reaching the forest floor. Where sunlight is able to reach the ground, near riverbanks or clearings, a jungle of thick vegetation forms. The world's largest tropical rainforests can be found in South America's Amazon River Basin and Africa's Congo River Basin.

Tropical Wet Climate Map and Graph



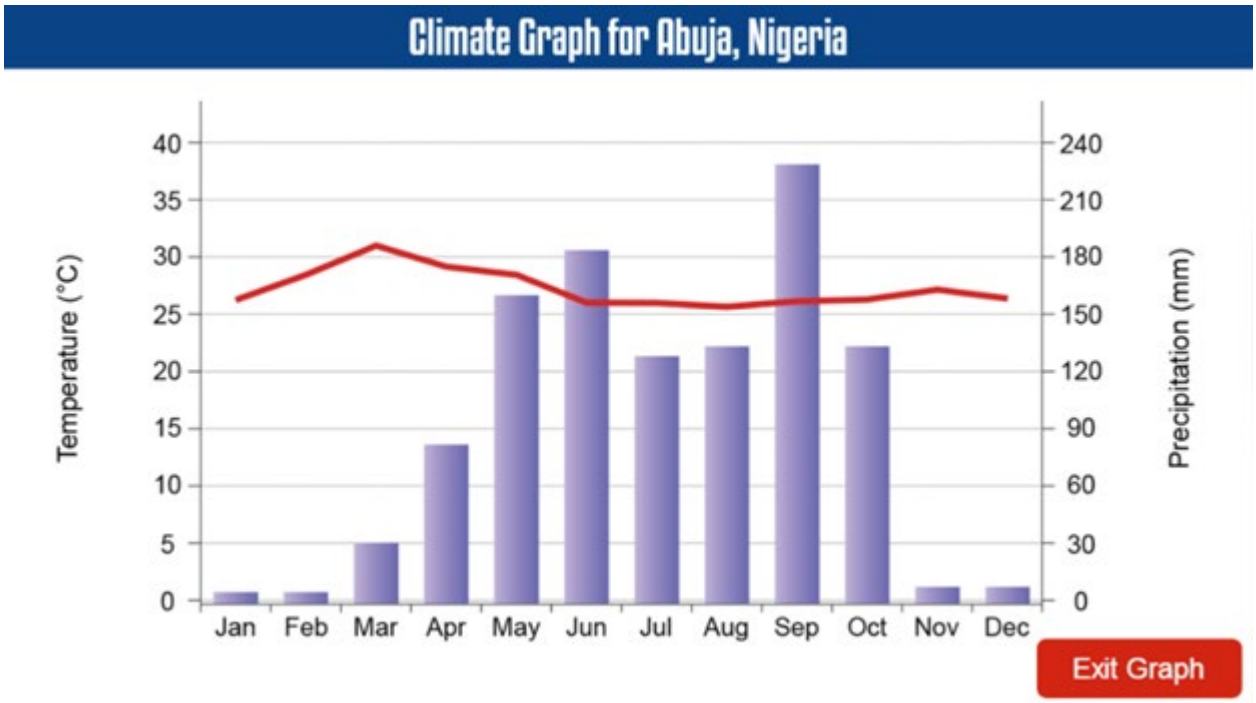
Low Latitude Climate: Tropical Wet and Dry



Tropical wet and dry climates are typically found north and south of tropical wet regions. Tropical wet and dry climates experience warm temperatures all year, but the amount of precipitation varies. There is usually a short wet season, where rainfall is plentiful, and a long dry season with very little rain.

Savanna vegetation is commonly found in this type of climate. A savanna is tropical grassland, with thick grasses and scattered trees that are able to survive the long dry season. During the wet season, the grasses flourish, growing tall and green; however, during the dry season, they turn brown or may even die above ground, lying dormant until the next wet season. The largest savanna is found in Africa, and is home to animals such as elephants, giraffes, lions, and zebras.

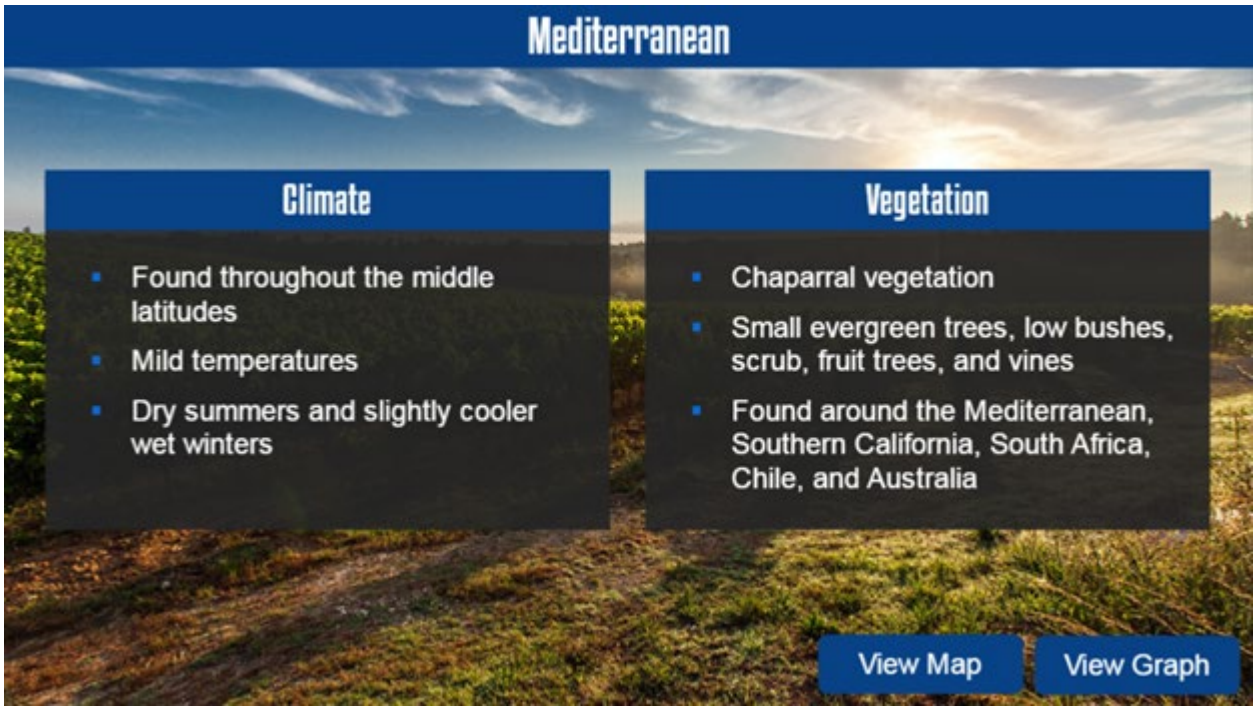
Tropical Wet and Dry Climate Map and Graph



Middle Latitudes: Climate and Vegetation

Click each image to learn more.

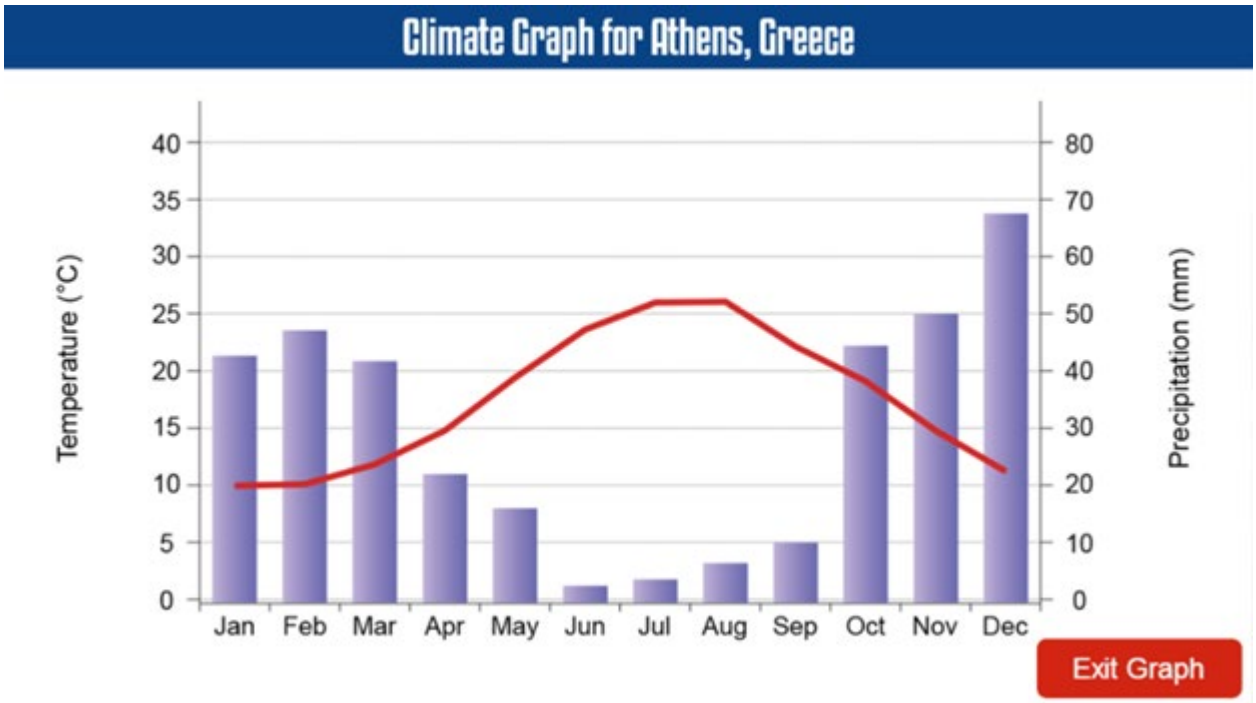
Middle Latitude Climate: Mediterranean



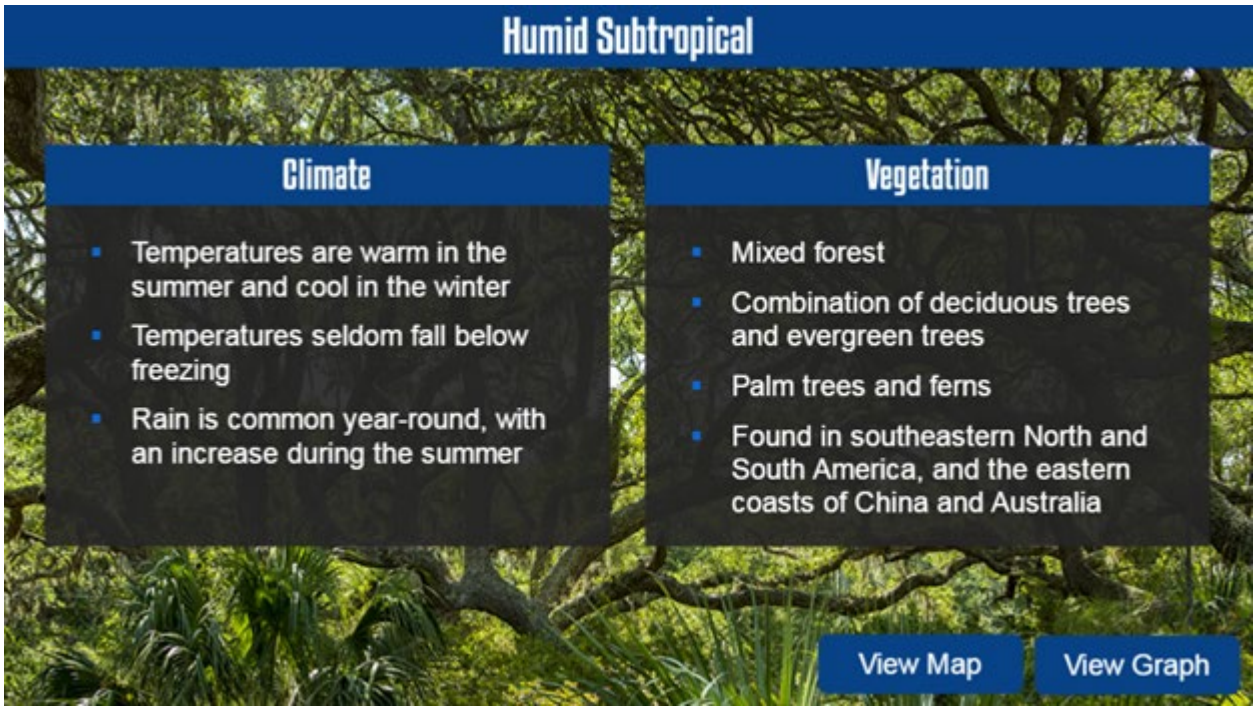
As the name suggests, Mediterranean climates are mostly found around the Mediterranean Sea; however, this type of climate can be found throughout the middle latitudes. The Mediterranean climate region is characterized by mild temperatures, usually between 60° and 70° Fahrenheit, and dry summers. The winters are generally wet, and only slightly cooler than the summers.

Because Mediterranean climates are relatively dry, chaparral vegetation is quite common. Chaparral vegetation refers to small evergreen trees, low bushes, and scrub. These plants have thick, leathery leaves that help retain moisture during the drier months. Fruit trees and vines also grow well in this region. The largest areas of chaparral vegetation can be found around the Mediterranean Sea, in Southern California, in South Africa, in Chile, and in Australia.

Mediterranean Climate Map and Graph



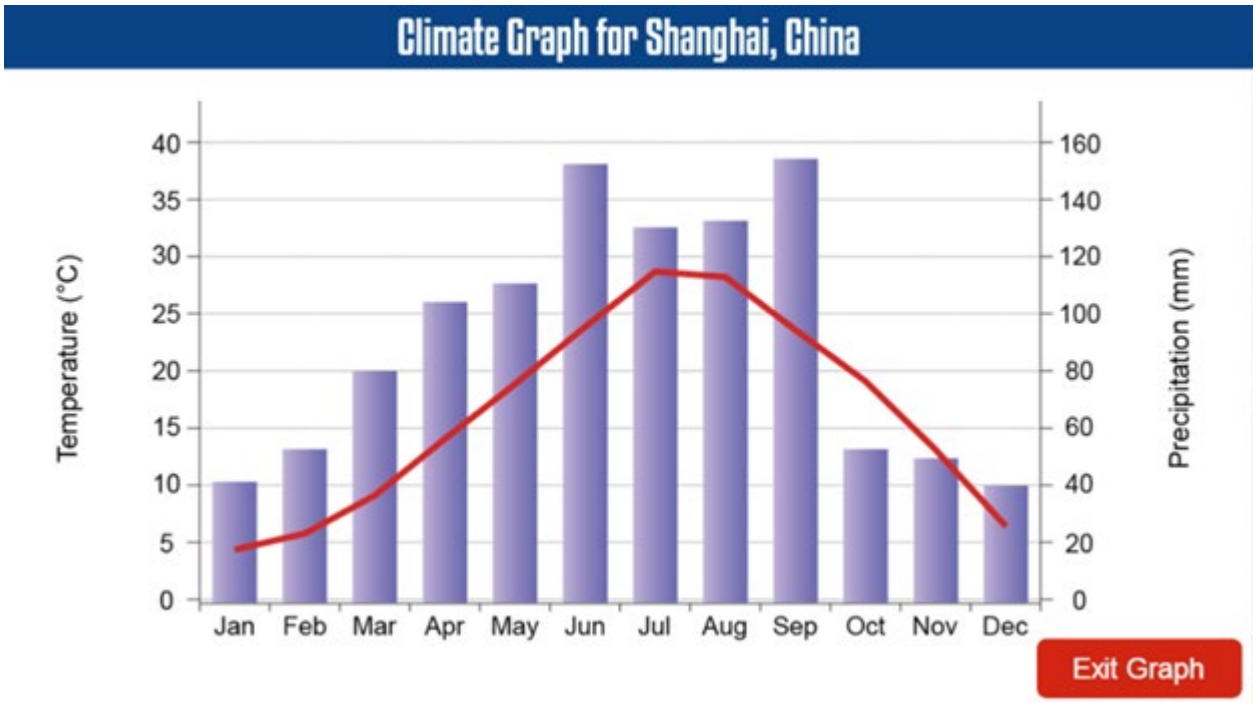
Middle Latitude Climate: Humid Subtropical



The humid subtropical climate is found between 20° and 40° North and South latitudes, usually on the eastern coasts of continents. Temperatures are warm in the summer and cool in the winter, although the temperatures seldom fall below freezing. This means that the temperature may occasionally drop below freezing, but the average monthly temperatures are not below 32° Fahrenheit. Rain is common throughout the year, with an increase during the summer.

The natural vegetation found in a humid subtropical climate is mixed forest. A mixed forest contains deciduous trees, which lose their leaves during colder months, and evergreen trees, which stay green year-round. Palm trees and ferns are common because of the steady rain and warm temperatures. The humid subtropical region is found in southeastern North and South America, and the eastern coasts of China and Australia.

Humid Subtropical Climate Map and Graph

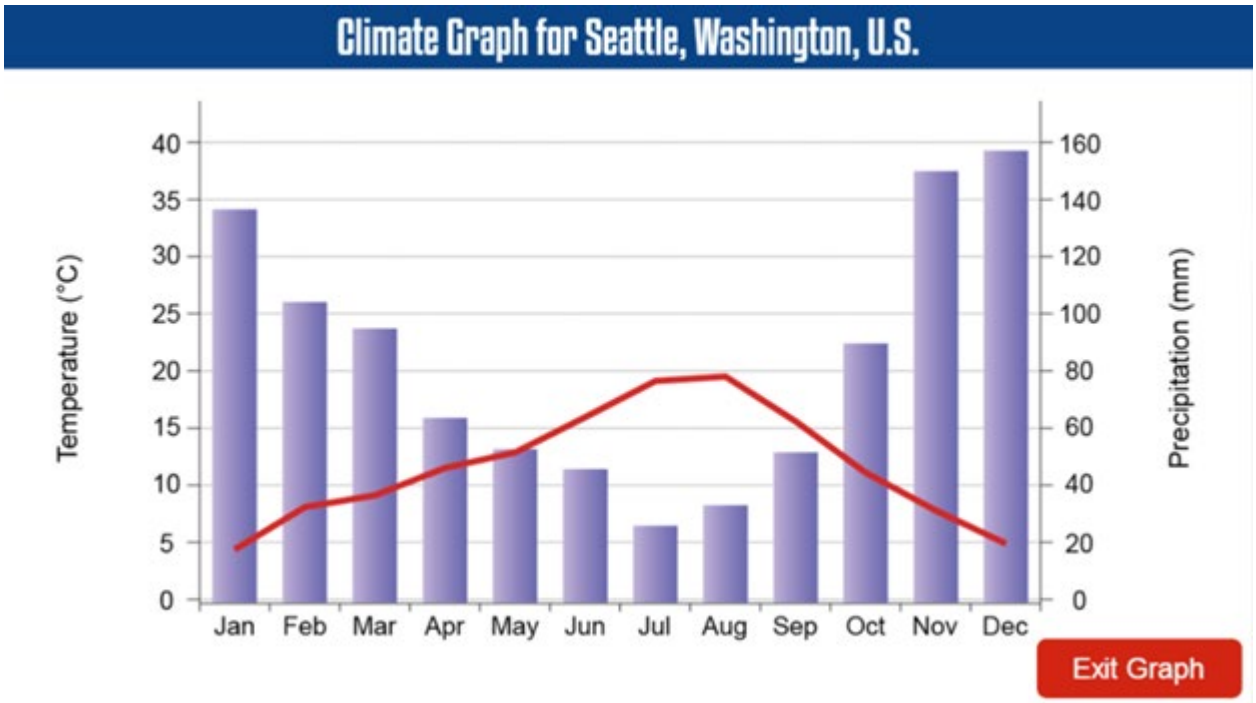


Middle Latitude Climate: Marine West Coast

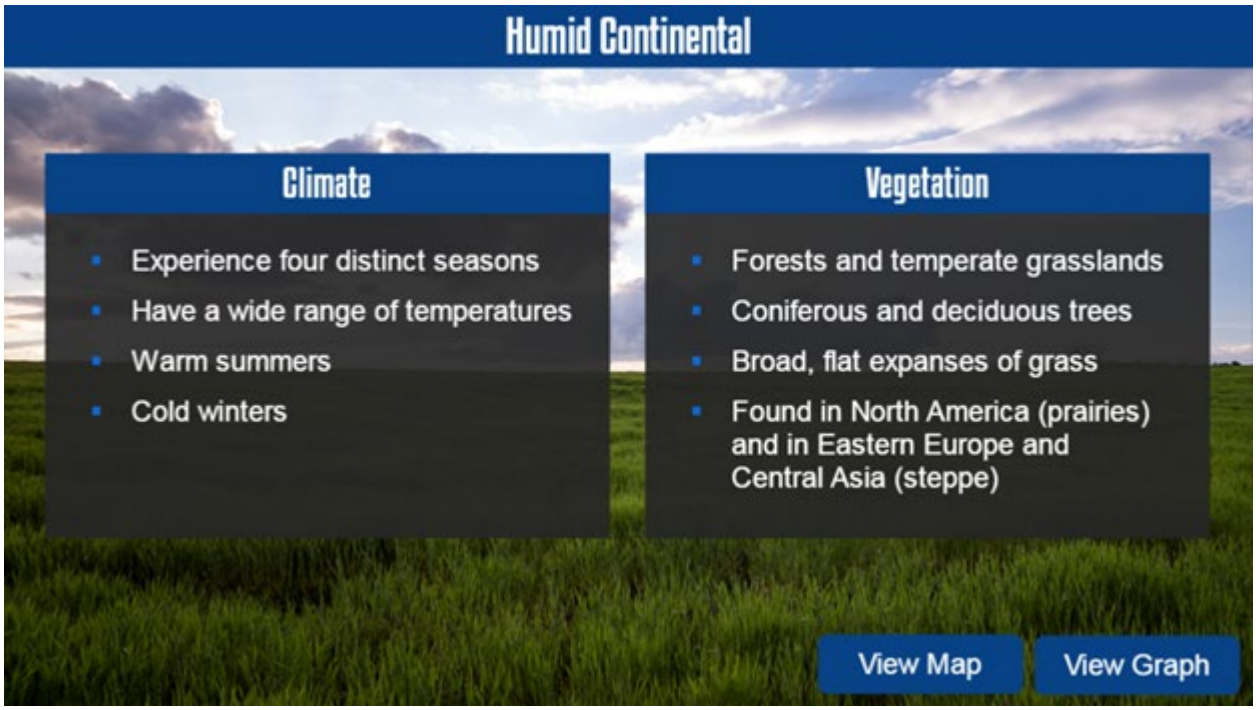
The marine west coast climate region is generally found just outside the Mediterranean climate region. This region experiences mild temperatures and rain all year. Cloudy, foggy, and damp days are common, due to the cooler temperatures and the amount of precipitation.

Large areas of forest are found throughout the marine west coast climate region. Like other middle latitude forests, the trees found in this climate are a mix of deciduous trees and coniferous evergreen trees. Redwoods and sequoias are examples of the kinds of coniferous trees that can be found in this environment. The consistent rainfall allows these trees to grow to hundreds of feet tall. The marine west coast region is found near the ocean in Europe, western North and South America, and southeastern Africa and Australia.

Marine West Coast Climate Map and Graph



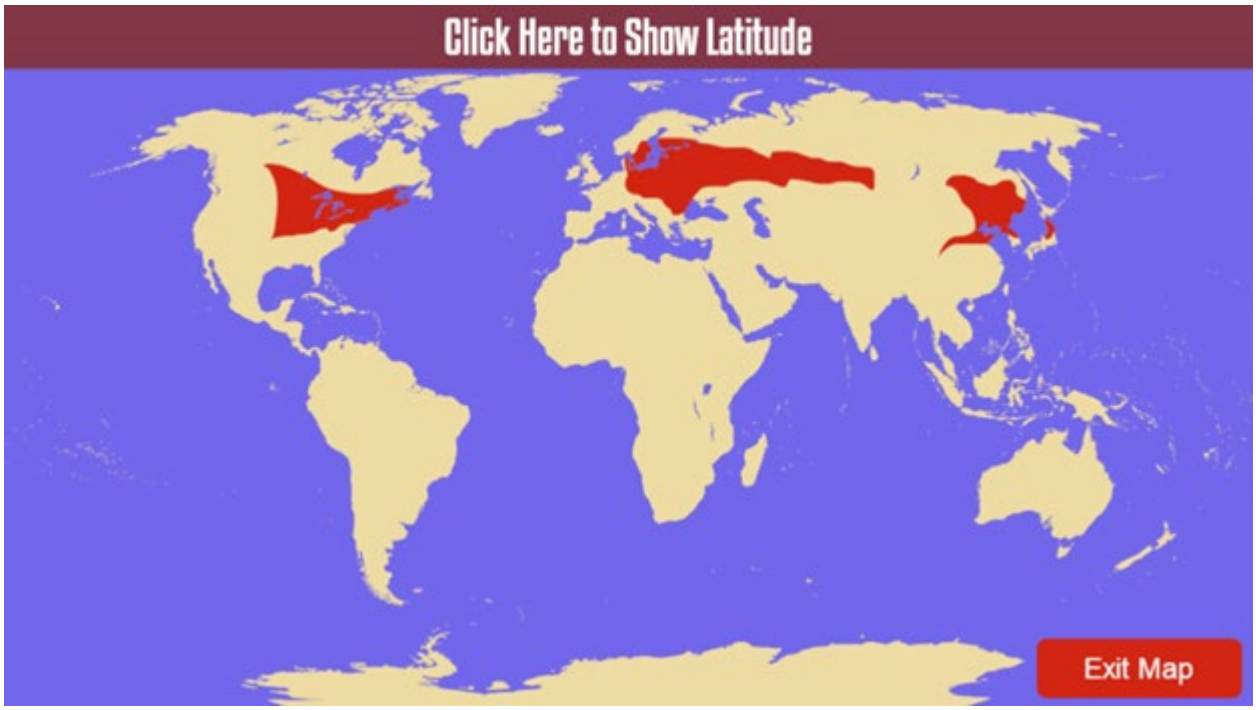
Middle Latitude Climate: Humid Continental

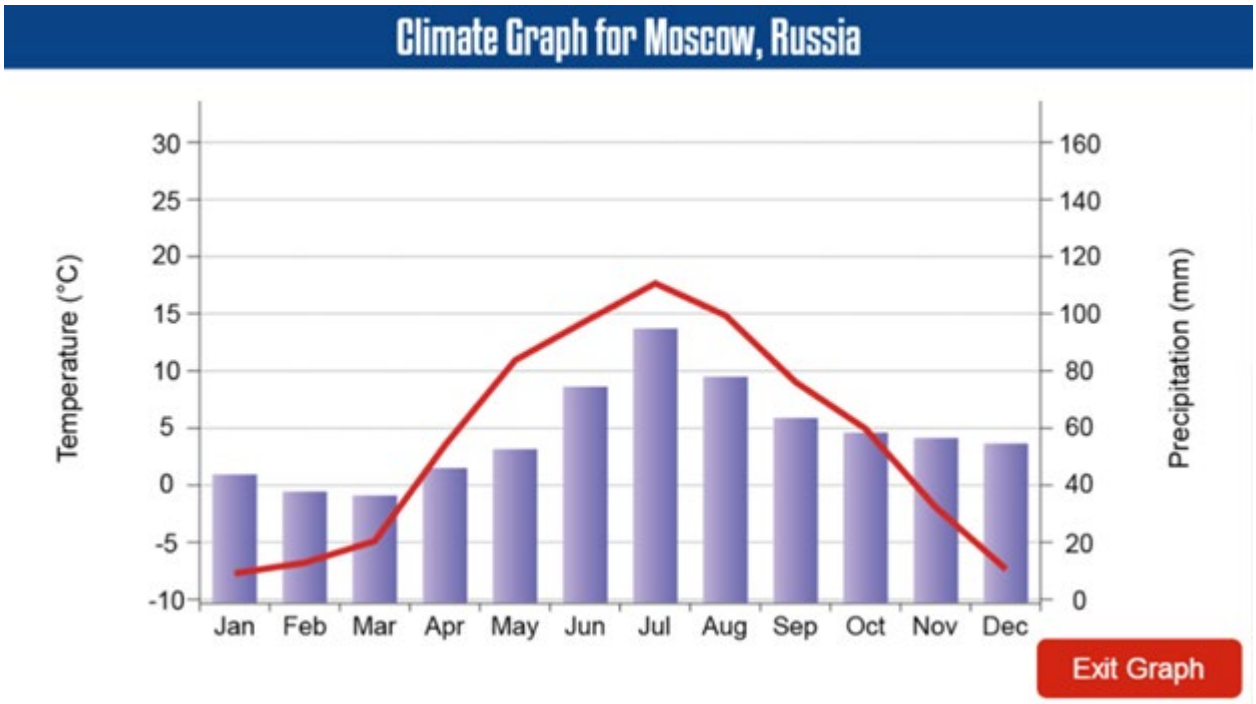


Humid continental climates are generally found in the interior of continents, between 40° and 60° North and South latitude. These climates experience four distinct seasons: spring, summer, autumn, and winter. They also experience a wide range of temperatures. For instance, a typical summer month may have an average temperature of 75° Fahrenheit, while a typical winter month can easily experience an average temperature of 25° Fahrenheit.

The types of vegetation found in a humid continental climate can range from forests to temperate grasslands. Humid continental forests are a mix of coniferous trees and deciduous trees. The grasslands are broad, flat expanses, filled with different types of grass. Depending on the location, these grasslands may be called a different name. For example, in North America, the grasslands are called prairies. In Eastern Europe and Central Asia, the grasslands are called steppe, which comes from a Russian word meaning “treeless plain.”

Humid Continental Climate Map and Graph

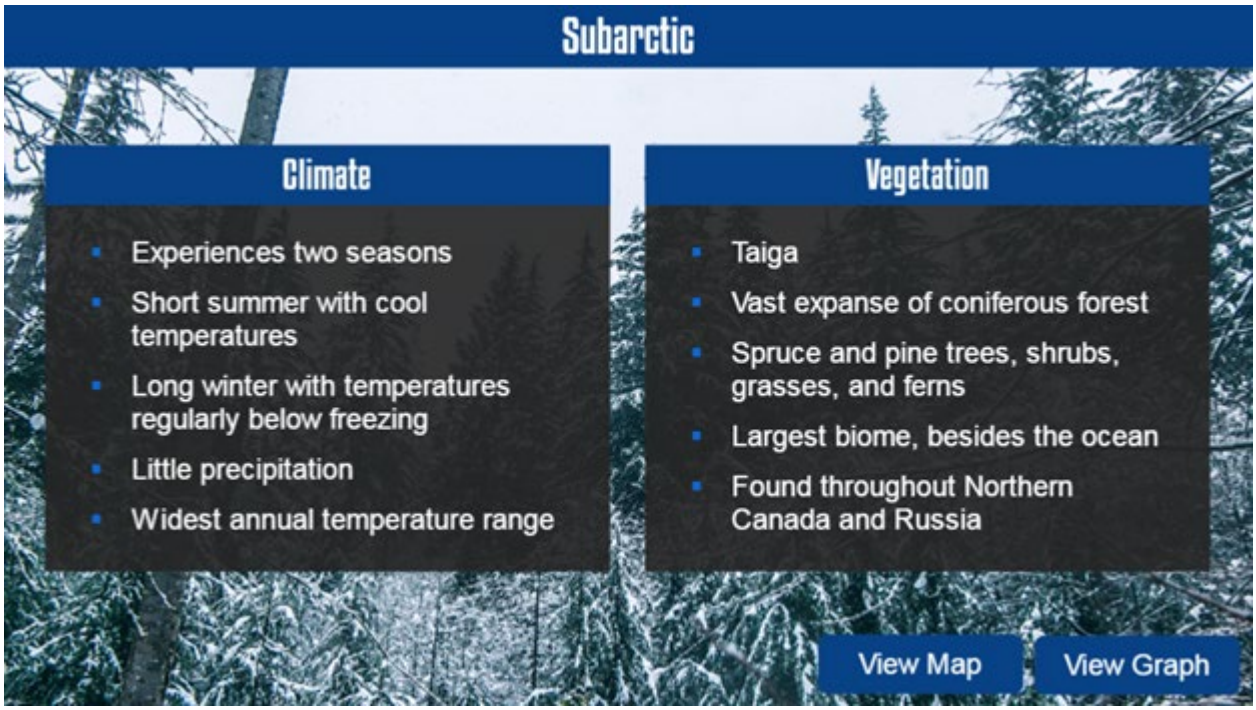




High Latitudes: Climate and Vegetation

Click each image to learn more.

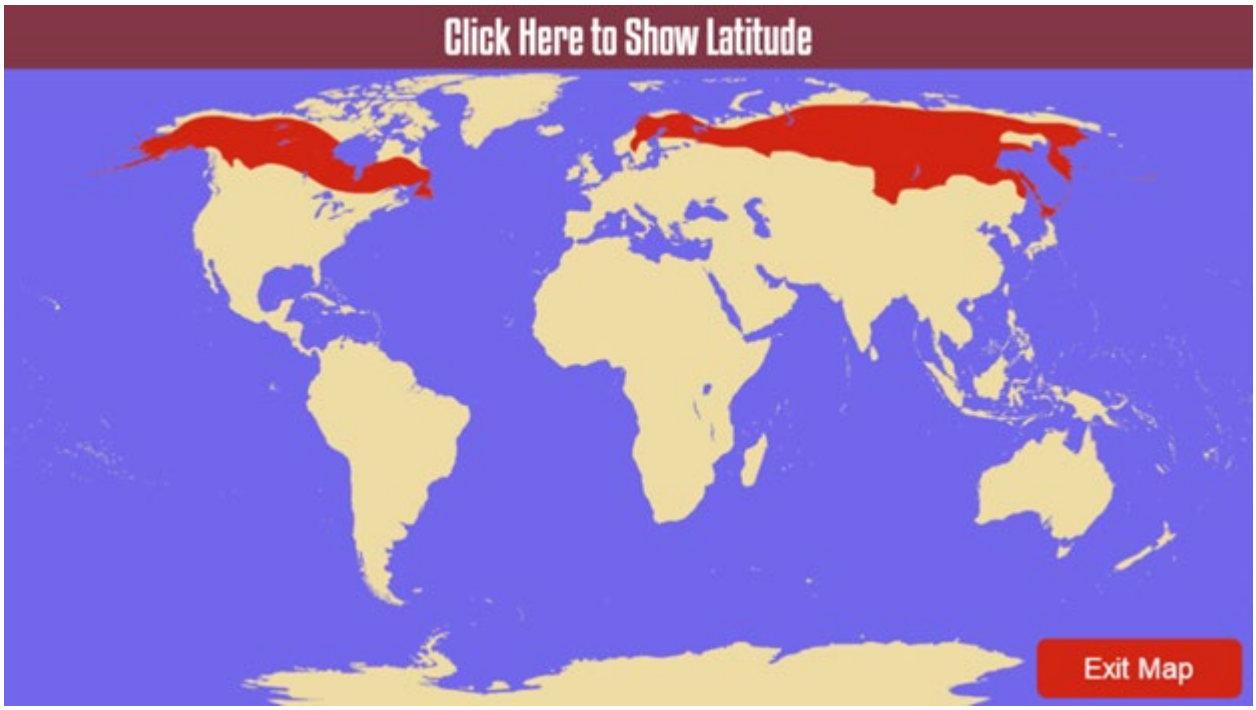
High Latitude Climate: Subarctic

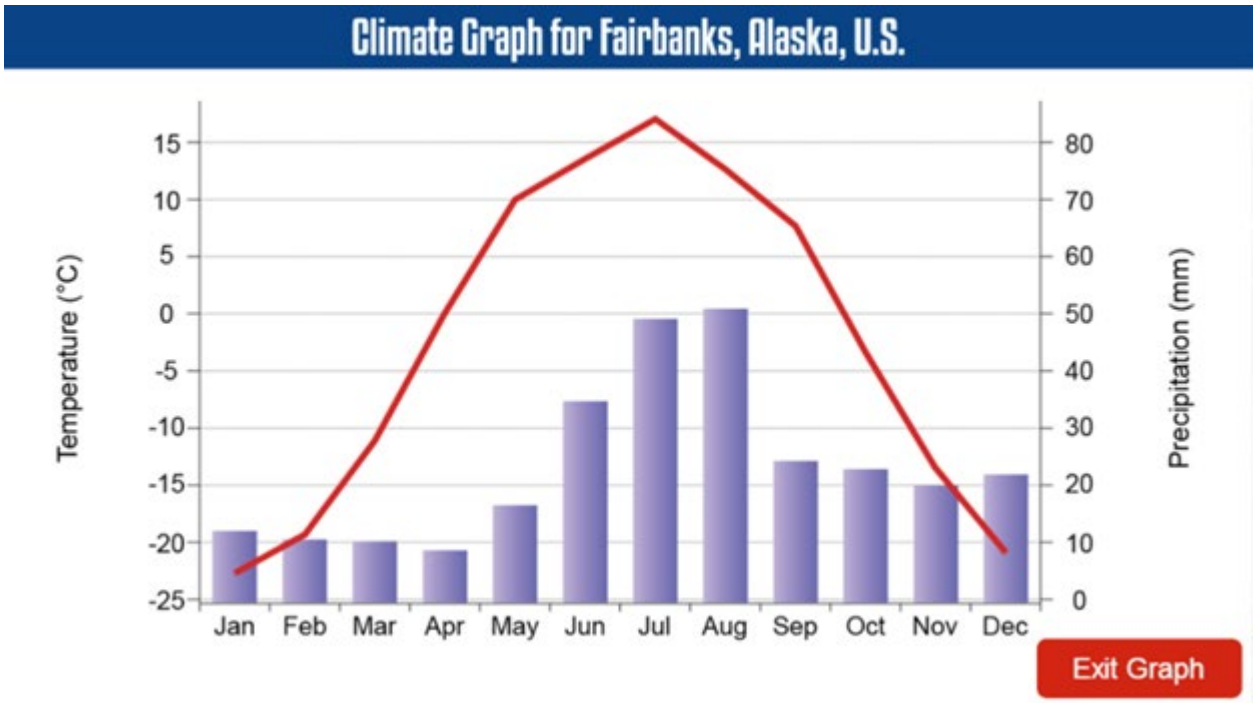


Subarctic climates cover huge areas of the earth around 60° North latitude. This region experiences two seasons: a short summer with cool temperatures, and a long winter with temperatures that are regularly below freezing. Because the temperatures are so low, there is usually little precipitation. The subarctic region has the widest annual temperature range between high and low temperatures.

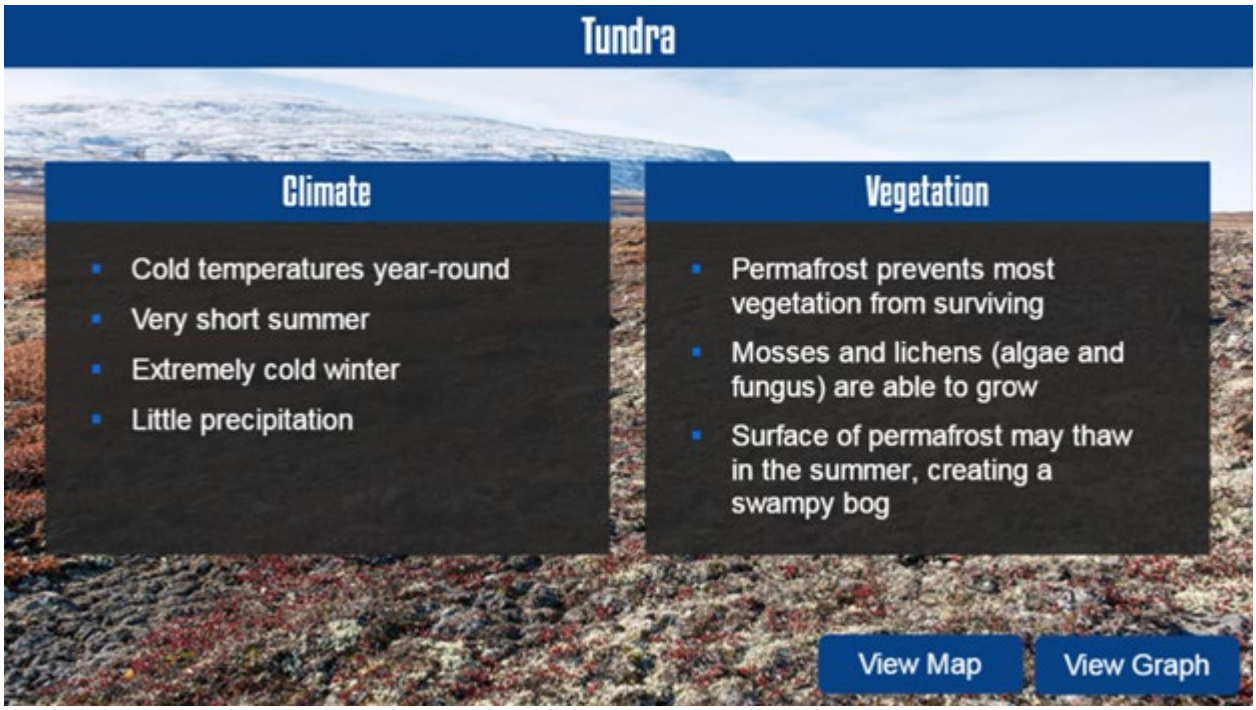
The vegetation in subarctic regions consists of the taiga, which is a vast expanse of coniferous forest. The spruce and pine trees that make up the taiga are strong enough to survive the extreme winter months. Shrubs, grasses, and ferns can also grow in the summer. The taiga is the world's largest biome, besides the ocean, and can be found throughout most of Northern Canada and Russia.

Subarctic Climate Map and Graph





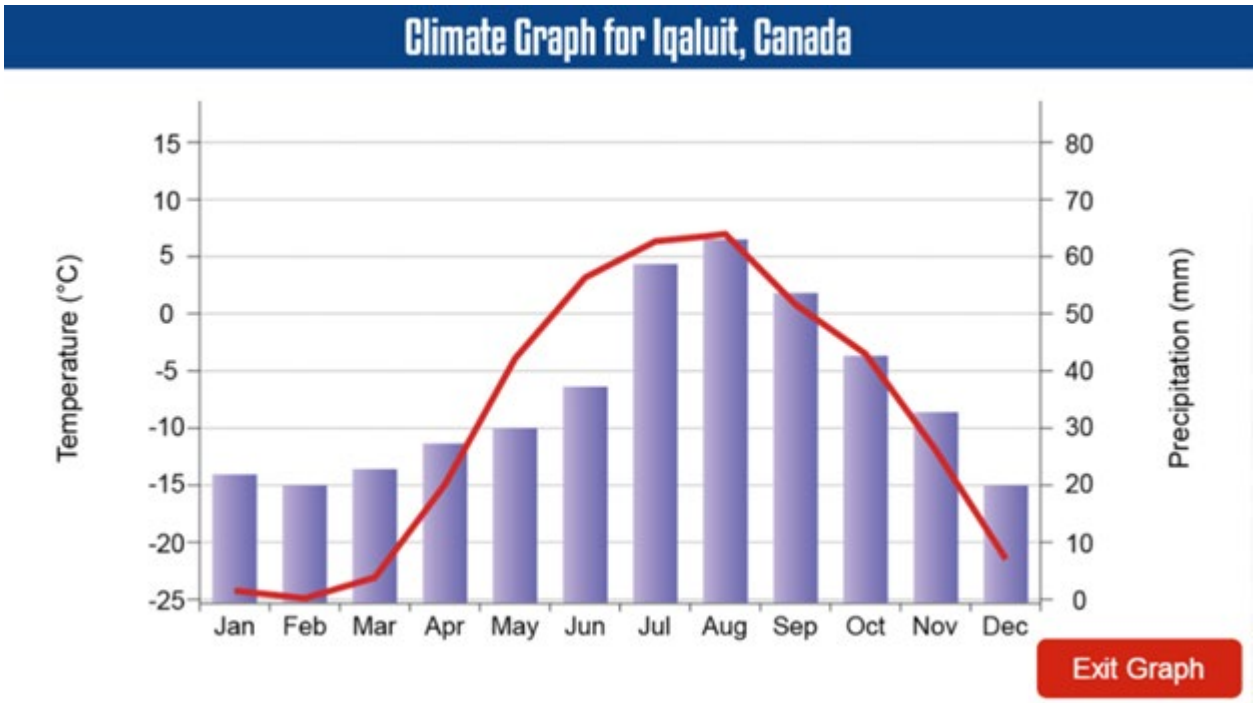
High Latitude Climate: Tundra



The tundra is a region that stretches from the Arctic and Antarctic Circles to the poles. Temperatures are cold year-round, never rising above 50° Fahrenheit during the very short summer. The extremely cold temperature means that this region experiences little precipitation.

It is so cold in the tundra that permafrost, or permanently frozen ground, is common. The permafrost prevents most vegetation from surviving, except for mosses and lichens, which are a combination of algae and fungus. During the short summer, the surface layer of the permafrost may thaw, but since the water cannot reach the soil through the frozen ground, it creates a swampy bog. Once the temperatures fall below freezing, the ground becomes frozen again.

Tundra Climate Map and Graph



High Latitude Climate: Icecap

The icecap region is coldest climate on Earth. The temperatures are always below freezing, even during the brief summer. The extreme cold forms ice sheets that gradually move into neighboring waters. Snow is actually quite rare in the icecaps, due to the severe temperatures. In fact, this region receives less than ten inches of precipitation a year, and is technically considered a polar desert.

Vegetation cannot grow in the icecaps; however, there are some animals that are able to survive in the surrounding regions and waters. For example, seals, polar bears, and penguins are able to live off the oceans in these climates. The icecap regions can be found in Antarctica, and the Arctic Ocean around Greenland.

Icecap Climate Map and Graph