

## Encyclopedic Entry

# vegetation region

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Scientists divide the Earth's land into what are called vegetation regions. These areas have [distinct](#) types of plants, [soil](#), and weather patterns. Vegetation regions can be divided into five major types: [forest](#), [grassland](#), [tundra](#), [desert](#), and [ice sheet](#). [Climate](#), soil, the ability of soil to hold water, and the [slope](#), or angle, of the land all determine what types of plants will grow in a particular region.

### Forest

Forests are areas with trees grouped in a way so their leaves, or [foliage](#), shade the ground. Forests can be found just about anywhere trees can grow, from below [sea level](#) to high in the mountains. From tropical rain forests near the [Equator](#) to boreal forests in cold climates close to the [Arctic Circle](#), different types of forests can be found all over the world.

One way to [classify](#) different types of forests is by the type of trees a forest has. [Deciduous](#) forests have trees with green leaves that change color in the fall and drop altogether in the winter. Trees that are common in deciduous forests are [oak](#) and [maple](#). The northeastern United States is covered in deciduous forest, and tourists flock to the area every [autumn](#) to experience the orange, yellow, and red leaves blanketing the region.

[Evergreen](#) forests have trees with leaves that stay green all year long. One of the places evergreen forests can be found is on the opposite side of the North American [continent](#)—in the [Pacific Northwest](#), which includes the Canadian [province](#) of British Columbia and the U.S. states of Washington and Oregon. The Pacific Northwest is full of evergreen trees like [fir](#).

Sometimes forests are classified by the type of leaves on their trees. Trees in broad-leaved forests have wide, flat leaves. Tropical rain forests are a type of broad-leaved forest. Tropical rain forests, such as Brazil's Amazon Basin [rain forest](#), are found near the Equator. They contain more than half of the world's [biodiversity](#), or variety of [plant](#) and animal species.

Coniferous forests have trees with cones and needles instead of leaves. Coniferous forests have the tallest ([coast redwood](#)), largest ([giant sequoia](#)), and oldest ([bristlecone pine](#)) trees in the world.

Many forests are mixed, meaning they have both broadleaf and coniferous trees. The [eucalyptus](#) forests of Australia are mixed forests, for instance. The evergreen eucalyptus trees are mixed with deciduous trees like [beech](#).

### Grassland

Grasslands are, as their name suggests, flat and open areas where grasses are the [dominant](#) type of vegetation. Grasslands can be found on every continent except Antarctica.

Climate plays a role in the type of grassland you get. In cool, mild climates, like northwest Europe, grasslands are dominated by tough vegetation, such as [oats](#), that thrives all year. Some of these grasses are so tough and [hardy](#) that they are considered weeds.

In warmer climates, [seasonal vegetation](#) survives better. Temperate grasslands exist where there are seasonal

variations in temperature over the course of the year: hot summers and cold winters. Different grasses [thrive](#) in different temperatures here. Temperate grasslands exist from the prairies of North America to the veld, or rural grassland, of South Africa.

Tropical grasslands are called savannas. They do well in weather that is warm year-round and usually pretty dry. The most famous savannas are in Africa. Serengeti National Park, in Tanzania, has three distinct types of [savanna](#) grassland: long [grass](#), intermediate grass, and short grass. This part of the Serengeti is known as the [Serengeti Plains](#), and it supports wildlife from aardvarks to zebras.

Grasslands are important for [milk](#) and [dairy production](#); dairy cows are happiest, and most productive, in areas in which they can [munch](#) on grass all day.

## Tundra

Tundra is an area where [tree](#) growth is difficult because of cold temperatures and short seasons. Vegetation in tundra is limited to a few shrubs, grasses, and mosses. Scientists estimate roughly 1,700 different species live in the tundra, which isn't much compared to forests and grasslands. The ground is often too cold for plants to set down roots, and without plants, few animal species can survive.

There are two types of tundra: [alpine tundra](#) and [arctic tundra](#). Alpine tundra is separated from a forest [vegetation region](#) by the [tree line](#), the area beyond which conditions are too harsh or cold for tree growth. The weather in alpine tundras is cold, snowy, and windy. Most of the [Tibetan Plateau](#), the so-called "roof of the world" located in Tibet, China, and India, is alpine tundra. Animals like [mountain goats](#) live in this vegetation region.

Arctic tundra occurs in the far-northern [hemisphere](#) of the Earth. It has a bare [landscape](#) and is frozen for much of the year. Here, the tundra can include [permafrost](#), or soil that is permanently frozen. Russia and Canada have huge areas of arctic tundra. During the summer, the permafrost thaws just a bit, allowing some plants to grow in the wet, marshy ground. You won't find many mammals in the arctic tundra, but thousands of insects and birds show up every year and enjoy the marshes before they freeze. Among the few mammals that actually thrive in the arctic tundra are [caribou](#) and polar bears.

## Desert

Deserts have almost no precipitation, or rainfall. In fact, deserts are specifically defined as areas with an average annual precipitation of less than 10 inches per year. Deserts usually have really high daytime temperatures, low nighttime temperatures, and very low humidity.

Desert soil is often sandy, rocky, or gravelly. Plant life is highly specialized to adapt to these coarse, dry conditions, with long roots, small leaves, stems that store water, and prickly spines that discourage animals from touching or eating them. Cactuses, which are native to deserts in North and South America, are an example of this kind of plant. Despite the barren look of hot deserts, they are full of animal life. Most desert animals, such as lizards or snakes, are nocturnal, meaning they are active at night. Nocturnal animals take advantage of the cooler nighttime temperatures of the hot desert.

Not all deserts are hot and sandy, however. The largest desert in the world is the [Antarctic Desert](#), which takes up most of the continent of Antarctica. In the Antarctic Desert, ice sheets cover barren rock. Few animals can live in the Antarctic Desert. Those that do are often [microscopic](#), such as [lice](#).

## Ice Sheet

The interesting thing about the ice sheet "vegetation region" is that there really isn't any vegetation there at all! An ice sheet is a large stretch of [glacier](#) ice that covers the land all around it for more than 50,000 square kilometers (20,000 square miles). Currently, the only ice sheets are in Antarctica and Greenland. Don't confuse the ice sheets, called polar ice caps, with other ice shelves or glaciers; an ice sheet is much, much bigger.

Ice sheets are important [research](#) sites for scientists. The Antarctic ice sheet is a record of Earth's [atmospheric changes](#). By looking at layers in the ice, scientists can keep track of different levels of [pollution](#) or volcanic gases in the atmosphere. The 1883 eruption of the Indonesian [island volcano](#) of Krakatoa can be located and dated by the distinct air bubbles in the Antarctic ice sheet, for instance.

Scientists are also studying ice sheets to measure the rate of melting ice. Parts of the Greenland ice sheet were

once thought to be permanent, but they are now melting at a fast pace.

## VOCABULARY

Term	Part of Speech	Definition
<b>alpine tundra</b>	<i>noun</i>	flat, treeless vegetation region separated from a forest by the tree line.
<b>Antarctic Desert</b>	<i>noun</i>	dry, barren rocks covered by an ice sheet that makes up most of the continent of Antarctica.
<b>Arctic Circle</b>	<i>noun</i>	parallell of latitude that runs 66.5 degrees north of the Equator.
<b>arctic tundra</b>	<i>noun</i>	flat, treeless vegetation region near the Arctic Circle.
<b>aspen</b>	<i>noun</i>	variety of poplar tree.
<b>atmospheric changes</b>	<i>noun</i>	alterations in the layer of air surrounding the Earth, such as an increase of pollution or humidity.
<b>autumn</b>	<i>noun</i>	season between summer and winter. Also called fall.
<b>beech</b>	<i>noun</i>	tree native to Asia, Europe, and North America.
<b>biodiversity</b>	<i>noun</i>	all the different kinds of living organisms within a given area.
<b>bird</b>	<i>noun</i>	egg-laying animal with feathers, wings, and a beak.
<b>blanket</b>	<i>verb</i>	to cover entirely.
<b>boreal forest</b>	<i>noun</i>	land covered by evergreen trees in cool, northern latitudes. Also called taiga.
<b>bristlecone pine</b>	<i>noun</i>	oldest living tree species on Earth. Also called hickory pine.
<b>broadleaf forest</b>	<i>noun</i>	land covered by trees with wide, flat leaves.
<b>caribou</b>	<i>noun</i>	large deer native to North America.
<b>Chukchi</b>	<i>noun</i>	people and culture native to Siberia.
<b>classify</b>	<i>verb</i>	to identify or arrange by specific type or characteristic.
<b>climate</b>	<i>noun</i>	all weather conditions for a given location over a period of time.
<b>coast redwood</b>	<i>noun</i>	tallest tree species on Earth.
<b>cone</b>	<i>noun</i>	hard, spiral structure that is the fruit of some trees.
<b>coniferous forest</b>	<i>noun</i>	land covered by trees with thin needles instead of flat leaves.
<b>continent</b>	<i>noun</i>	one of the seven main land masses on Earth.
<b>cow</b>	<i>noun</i>	large, domesticated mammal used for milk and meat.
<b>dairy production</b>	<i>noun</i>	art, science, and industry of cultivating milk and milk products, such as cheese.
<b>deciduous</b>	<i>adjective</i>	type of plant that sheds its leaves once a year.

<b>desert</b>	<i>noun</i>	area of land that receives no more than 25 centimeters (10 inches) of precipitation a year.
<b>distinct</b>	<i>adjective</i>	unique or identifiable.
<b>dominant</b>	<i>adjective</i>	main or most important.
<b>Equator</b>	<i>noun</i>	imaginary line around the Earth, another planet, or star running east-west, 0 degrees latitude.
<b>eucalyptus</b>	<i>noun</i>	tree native to Oceania.
<b>evergreen</b>	<i>noun</i>	tree that does not lose its leaves.
<b>fern</b>	<i>noun</i>	flowerless plant.
<b>fir</b>	<i>noun</i>	variety of pine tree.
<b>flower</b>	<i>noun</i>	blossom or reproductive organs of a plant.
<b>foliage</b>	<i>noun</i>	leaves of a plant, or the leaves and branches of a tree or shrub.
<b>forest</b>	<i>noun</i>	ecosystem filled with trees and underbrush.
<b>giant sequoia</b>	<i>noun</i>	largest species of tree on Earth.
<b>glacier</b>	<i>noun</i>	mass of ice that moves slowly over land.
<b>grass</b>	<i>noun</i>	type of plant with narrow leaves.
<b>grassland</b>	<i>noun</i>	ecosystem with large, flat areas of grasses.
<b>hardy</b>	<i>adjective</i>	strong or able to withstand severe weather.
<b>hemisphere</b>	<i>noun</i>	half of a sphere, or ball-shaped object.
<b>hike</b>	<i>verb</i>	to walk a long distance.
<b>ice sheet</b>	<i>noun</i>	thick layer of glacial ice that covers a large area of land.
<b>ice shelf</b>	<i>noun</i>	mass of ice that floats on the ocean but remains attached to the coast.
<b>insect</b>	<i>noun</i>	type of animal that breathes air and has a body divided into three segments, with six legs and usually wings.
<b>island</b>	<i>noun</i>	body of land surrounded by water.
<b>Lakota</b>	<i>noun</i>	people and culture of seven Sioux tribes native to the Great Plains.
<b>landscape</b>	<i>noun</i>	the geographic features of a region.
<b>leaf</b>	<i>noun</i>	organ growing from the stem of a plant.
<b>lice</b>	<i>noun</i>	insects that prey on animal blood. Singular: louse.
<b>mammal</b>	<i>noun</i>	animal with hair that gives birth to live offspring. Female mammals produce milk to feed their offspring.
<b>maple</b>	<i>noun</i>	type of tree.
<b>marsh</b>	<i>noun</i>	wetland area usually covered by a shallow layer of seawater or freshwater.
<b>microscopic</b>	<i>adjective</i>	very small.

<b>Midwest</b>	<i>noun</i>	area of the United States consisting of the following states: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
<b>milk</b>	<i>noun</i>	white liquid produced by female mammals to feed their young.
<b>moss</b>	<i>noun</i>	tiny plant usually found in moist, shady areas.
<b>mountain</b>	<i>noun</i>	landmass that forms as tectonic plates interact with each other.
<b>mountain goat</b>	<i>noun</i>	variety of wild or domesticated mammal.
<b>munch</b>	<i>verb</i>	to eat by chewing vigorously.
<b>needle</b>	<i>noun</i>	long, thin, pointed leaf.
<b>oak</b>	<i>noun</i>	tree native to the Northern Hemisphere.
<b>oats</b>	<i>noun</i>	type of edible grass.
<b>Pacific Northwest</b>	<i>noun</i>	the area made of the U.S. states of Oregon and Washington, and the Canadian province of British Columbia.
<b>palm</b>	<i>noun</i>	type of tree with a tall trunk, no branches, and a leafy crown.
<b>permafrost</b>	<i>noun</i>	permanently frozen layer of the Earth's surface.
<b>Plains Indian</b>	<i>noun</i>	one of many people and cultures native to the Great Plains in North America.
<b>plant</b>	<i>noun</i>	organism that produces its own food through photosynthesis and whose cells have walls.
<b>polar bear</b>	<i>noun</i>	large mammal native to the Arctic.
<b>pollution</b>	<i>noun</i>	introduction of harmful materials into the environment.
<b>province</b>	<i>noun</i>	division of a country larger than a town or county.
<b>rain forest</b>	<i>noun</i>	area of tall, mostly evergreen trees and a high amount of rainfall.
<b>research</b>	<i>noun</i>	scientific observations and investigation into a subject, usually following the scientific method: observation, hypothesis, prediction, experimentation, analysis, and conclusion.
<b>root</b>	<i>noun</i>	part of a plant that secures it in the soil, obtains water and nutrients, and often stores food made by leaves.
<b>San</b>	<i>noun</i>	people and culture native to southern Africa. Also called Bushmen.
<b>sapling</b>	<i>noun</i>	young tree.
<b>savanna</b>	<i>noun</i>	type of tropical grassland with scattered trees.
<b>sea level</b>	<i>noun</i>	base level for measuring elevations. Sea level is determined by measurements taken over a 19-year cycle.
<b>seasonal vegetation</b>	<i>noun</i>	plants that grow, bloom, or flower during a specific time of year.
<b>Serengeti plains</b>	<i>noun</i>	grassland of the Serengeti ecosystem of Kenya and Tanzania.
<b>shrub</b>	<i>noun</i>	type of plant, smaller than a tree but having woody branches.

<b>slope</b>	<i>noun</i>	slant, either upward or downward, from a straight or flat path.
<b>soil</b>	<i>noun</i>	top layer of the Earth's surface where plants can grow.
<b>temperate grassland</b>	<i>noun</i>	flat, grassy area where there are seasonal differences in temperature and precipitation.
<b>thrive</b>	<i>verb</i>	to develop and be successful.
<b>Tibetan Plateau</b>	<i>noun</i>	flat, elevated landform located in Tibet, China, and India. Also known as the "rooftop of the world."
<b>tree</b>	<i>noun</i>	type of large plant with a thick trunk and branches.
<b>tree line</b>	<i>noun</i>	elevation point above which trees can no longer grow.
<b>tundra</b>	<i>noun</i>	cold, treeless region in Arctic and Antarctic climates.
<b>vegetable</b>	<i>noun</i>	plant that is grown or harvested for food.
<b>vegetation region</b>	<i>noun</i>	area with distinct plant types, determined by climate, soil, drainage, and elevation. There are five major vegetation regions: forest, grassland, tundra, desert, and ice sheet.
<b>vegetation zone</b>	<i>noun</i>	altitude, soil, and precipitation region in which a plant best survives.
<b>veldt</b>	<i>noun</i>	rural grasslands of southern Africa.
<b>volcanic gas</b>	<i>noun</i>	gas such as water vapor or carbon dioxide that is released into the atmosphere by a volcano.
<b>volcano</b>	<i>noun</i>	an opening in the Earth's crust, through which lava, ash, and gases erupt, and also the cone built by eruptions.
<b>weather pattern</b>	<i>noun</i>	repeating or predictable changes in the Earth's atmosphere, such as winds, precipitation, and temperatures.
<b>weed</b>	<i>noun</i>	unwanted plant.
<b>Yanomamo</b>	<i>noun</i>	people and culture native to the Amazon Basin.
<b>zebra</b>	<i>noun</i>	mammal, related to a horse, native to Africa.

## For Further Exploration

### Websites

- University of California: Checklists of Online Vegetation and Plant Distribution Maps



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