



Biomes

For Key Stage 2

This Pack contains:

4 ARTICLES

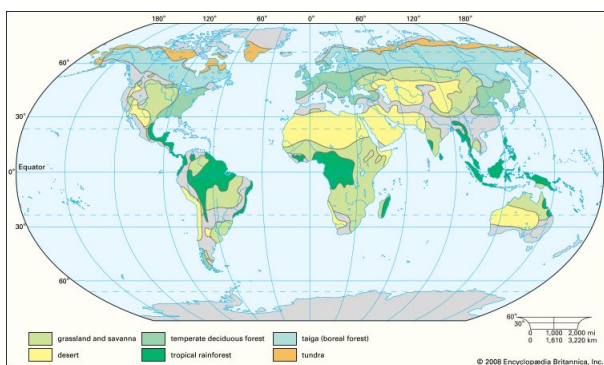
1 IMAGE

3 VIDEOS

ARTICLE

biome

A biome is a large region of Earth that has a certain climate and certain types of living things. Earth has many different biomes. The major ones are the tundra, taiga, deciduous forest, grassland, desert and tropical rainforest biomes.



There are several major biomes on Earth. A biome is a large region with a certain climate and certain types of living things.

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The plants and animals of each biome have traits that help them to survive in their particular biome. Plants and animals that live within smaller areas of a biome also depend on each other for survival. These smaller areas are called ecosystems. Each biome has many ecosystems.

Tundra

The tundra biome is found in extreme northern regions. This biome has cold, dry conditions. The main plants include mosses, lichens and short grasses. Arctic foxes, reindeer and migrating birds are some of the animals of the tundra.

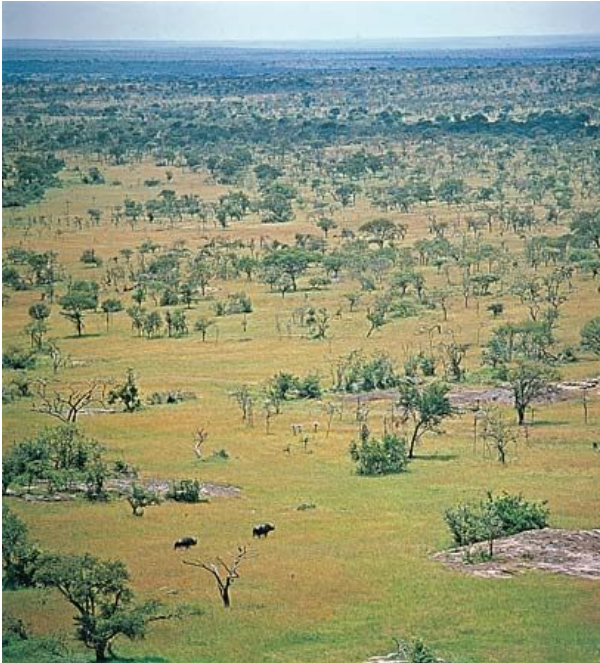
Taiga

The taiga biome lies just south of the tundra. This biome has long, cold winters and short, mild summers. The taiga receives more rain than the tundra. As a result it can support trees with needles, such as spruces and firs. Lynx, timber wolves, moose and beavers live in this biome.

Deciduous Forests

The deciduous forest biome is found in eastern North America, Europe and eastern Asia. This biome has cold winters and warm summers. The trees are deciduous, meaning that they shed their leaves in the autumn. Deer, bears, bobcats and squirrels are common to this biome.

Grasslands



Africa's Serengeti Plain is a tropical grassland, or savanna, biome.

Ingmar Holmasen

Temperate grasslands and tropical grasslands are the two main types of grassland biomes. Temperate grasslands have hot summers and cold winters. Tropical grasslands, also known as savannas, are hot all year long and have wet seasons. Prairie dogs and mule deer live in the temperate grasslands of North America. Giraffes, zebras and lions live in the tropical grasslands of Africa.

Deserts

The driest biome is the desert. Deserts receive less than 25 centimetres (10 inches) of rain each year. Cacti and creosote bushes are two types of plants that can survive the dry conditions. Rattlesnakes, lizards, roadrunners and owls are some of the animals of this biome.

Tropical Rainforests

Tropical rainforests lie near the Equator. This biome has hot, wet conditions all year long. The plants in this biome include ferns, orchids and large woody vines called lianas. Monkeys, parrots and anaconda snakes are just a few of the many rainforest animals.

Citation (MLA style):

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ARTICLE

desert

When people think of deserts, they usually think of regions that are sandy, hot and dry. However, there are other types of deserts as well. One of the world's major ecosystems, a desert is any large, barren region that supports very little life. Deserts cover at least 20 per cent of Earth's land surface.



Most deserts get less than 25 centimetres (10 inches) of rain each year.

Lynn Abercrombie

Where Deserts Are Found

Most of Earth's deserts are located along the latitudes known as the Tropic of Cancer and the Tropic of Capricorn. These hot, dry deserts lie mainly on the west coasts of continents, though they also extend across North Africa and far into Asia and Australia. Tropical deserts include the Sahara of northern Africa, the Thar Desert of the Indian subcontinent, the Victoria of Australia, and the Kalahari of south-western Africa.

The deserts located on the inside of continents extend towards Earth's poles. These are often called middle-latitude deserts. Ice cap and tundra regions around the poles, such as the barren lands of Antarctica and Greenland, are sometimes called cold deserts or high-latitude deserts.

Climate



The Gobi in Inner Mongolia is a cold desert.

Junming



The Kerzaz oasis is part of the western Sahara in Algeria.

Victor Englebert

One of the most characteristic features of most of the desert regions is that they get less than about 25 centimetres (10 inches) of rain in a year. Some deserts in coastal regions can experience fog and high humidity, while the interior desert regions tend to be very dry. When rain will occur is usually uncertain. For example, at Iquique in northern Chile, records show that during one period of almost four years the area received no rain at all. When precipitation does occur, it may be very heavy for short periods.

Deserts have extreme climates, and the temperatures range widely. Hot deserts, as their name indicates, experience very high temperatures by day, especially in summer. The highest recorded temperature occurred in Libya, where it reached 58° C (136.4° F).

The winters in deserts located far from the Equator are quite cold. In the month of July, Luktchin, a region in central Asia, records an average temperature of 32° C (90° F), while the January average is -10.6° C (13° F). The Gobi in central Asia has average temperatures below freezing for as many as six months each year. During the hottest months, the air temperature may average 41° C to 43° C (105° F to 110° F). In addition to temperature changes from summer to winter, there are also temperature changes from day to night, sometimes as great as 33 to 39 Celsius degrees (60 to 70 Fahrenheit degrees).

Land Forms

Deserts occur on all the continents. They differ greatly in the appearance and nature of their surface features, which range from mountains to plateaux to plains.

Very often deserts are associated with huge sand dunes. However, these are not as common or widespread as is believed. Even in deserts with a lot of sand, such as the Arabian, dunes occupy only about 30 per cent of the total area. If sand accumulations on plains pile up and look like a sea of sand, they are called ergs.



Tall limestone formations rise from the sand in the Pinnacles Desert in Western Australia.

© Alexander/Fotolia

The more common type of desert consists of rugged mountains separated by basins called bolsons. These mountains receive most of their rain in downpours. As the water rushes down the slopes, it cuts deep gullies and carries rock fragments, gravel and sand to the bolson. As the water slows down or evaporates, these materials are deposited, producing rugged forms such as the terrain in Death Valley, California. They are called badlands.

Sometimes when floodwaters collect in basins with no outlets, temporary shallow lakes called playa lakes are formed in desert regions. Other deserts consist of rocky plateaux, called hammadads, separated by sand-filled basins. Sometimes where streams or wind wear away the weaker rocks, strong rock formations called mesas or cuestas are formed in deserts. Gullies, known as wadis, are sometimes cut deep into the hammadads by rushing water.

Plants and Animals

Desert plants and animals have special traits to help them survive in the harsh climate. Some plants have deep roots in order to reach water underground. Others may spread their roots over a large area close to the surface of the soil to absorb the small amount of rain that falls. Desert plants often have a waxy coating to prevent water loss. Some even shed their leaves during the dry season. Many plants grow only when rain falls, passing most of the time as seeds or bulbs. Common desert plants are agaves, cacti, date palms and yuccas.

Typical desert animals are insects, reptiles, birds, rodents and a few large mammals. The smaller animals hide under stones and vegetation during the day when it is hot and emerge to feed at night. The camel can survive for many days on fat stored in its hump.

Human Habitation

Despite the hardships involved, people do live in deserts. The Tuareg of the Sahara, the San of the Kalahari, the Bedouins of the Middle East and North Africa, and the Aborigines of Australia are some such people. However, the total population of all desert regions is estimated at only about 85 million, or less than three people to each square kilometre. The only densely settled spots are irrigated places such as the lower Nile River valley.

Water and Drainage

People can live and grow crops in a desert only at places where they can get water. Such places are called oases. Land is usually fertile in oases and cultivated intensively. In North African and Asian oases, the chief food crops are dates, figs, cotton, sugar cane, wheat, barley, rice and beans. In desert regions of the United States, irrigated lands are mainly used for citrus fruit, dates, winter vegetables and cotton.

Usually groundwater lies at greater depths in deserts than in humid lands. In the wadis, or gullies, ordinary wells can usually tap a supply of good water. Oasis settlements, therefore, are most often found where wadis are numerous. Ergs, into which many wadis drain, may also have a water supply.

Deep wells are also bored where the rock structures hold water under pressure. The most generous supply of water for irrigation, however, is obtained from streams that rise in rainy regions outside deserts. The largest and best-known rivers that supply water to desert areas are the Nile in Egypt, the Tigris and the Euphrates in Iraq, and the Indus in Pakistan.

Desert Development

As humans have learned to irrigate the lands, improve methods of transportation and take advantage of valuable resources such as petroleum, they have found it easier to live in the deserts. Human activity has also had a harmful effect on the land, however. In the 20th century and into the 21st a process known as desertification became a problem for many people living in areas near deserts. As the populations continue to increase, more of those lands are used for farming and grazing to support the people. Because of poor farming methods as well as droughts, that land has slowly become more desertlike. This is a problem in many parts of the tropics and means that not enough food can be grown. Scientists are trying to find ways of stopping this process.

Citation (MLA style):

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ARTICLE

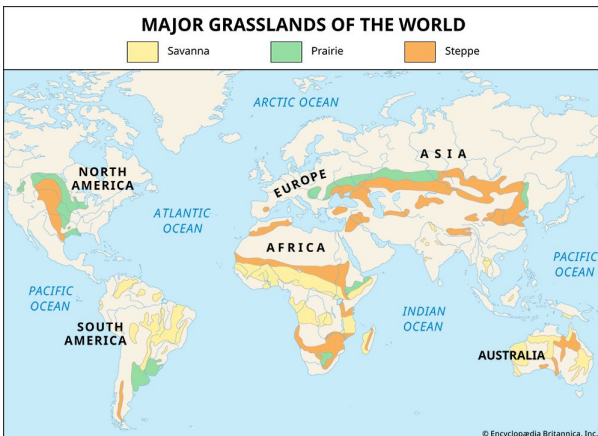
grassland

Grasses grow in wide, open spaces around the world. Large areas covered with grasses are called grasslands. Tropical grasslands grow close to the Equator. Temperate grasslands grow in regions farther from the Equator.



The grasslands in central North America are called prairies.

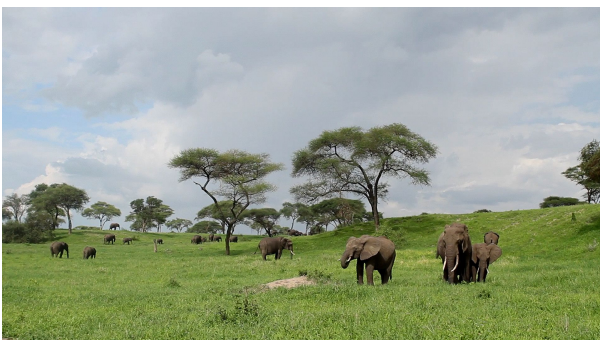
© Jim Parkin/Fotolia



There are three different kinds of major grasslands: savanna, prairie and steppe. They can be found all over the world.

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Features



Grasslands can be found all over the world.

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Many different kinds of grasses grow on the world's grasslands. Grasslands may have no trees or only a scattered few. Usually the land is flat. Sometimes it has rolling hills. Dust storms, tornadoes and wildfires sometimes rage across grasslands.

Grasslands are good for grazing livestock. Grasslands also have good soil for farming. Wheat, oats, maize and other crops have replaced many wild grasses.

Types of Grasslands



The sun sets on a savanna in the African country of Kenya.

© Digital Vision/Getty Images

Tropical grasslands are often called savannas. Africa, India, Southeast Asia, Brazil and Australia all have areas of tropical grassland. The climate of savannas is extreme. Temperatures are high, and there are wet and dry seasons. During the dry season savannas get little rain.



A boy on horseback rides through the steppes of Mongolia. The climate in these temperate grasslands of central Asia is less extreme than the climate of tropical grasslands, or savannas.

InvictaHOG

The climate in temperate grasslands is less extreme. The prairies of North America are temperate grasslands. So are the pampas of Argentina, the veld of southern Africa and the steppes of Central Asia. The huge rangelands in Australia's south-eastern corner are also temperate grasslands.

Life in the Grasslands

The large animals that live in tropical grasslands include zebras, gazelles, lions and kangaroos. Horses, antelope, hawks and prairie dogs are a few of the animals that live in temperate grasslands.

In the past wandering peoples lived on many of the world's grasslands. For example, the Mongols lived on the steppes of Central Asia. The Plains Indians lived on the prairies of North America.

Changing Grasslands

In the 1800s farmers moved onto the grasslands of southern Africa, Australia, South America and North America. They began changing the grasslands into farmland. In North America the prairies once extended down the middle of the continent, from Canada to Texas. Now most of this land is farmland. The Australian grasslands and the South American pampas have also become mostly farming and grazing lands. Grasslands have also disappeared as cities and towns have expanded.

But much grassland still exists. The veld still carpets large parts of southern Africa. Steppes extend 8,000 kilometres (5,000 miles) from eastern Europe to eastern China. They are mostly unspoiled wilderness, and few people live there.

Citation (MLA style):

"Grassland." *Britannica LaunchPacks: Biomes*, Encyclopædia Britannica, 20 Aug. 2024. packs-learn.eb.co.uk. Accessed 23 Sep. 2024.

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ARTICLE

tundra

The tundra is a large, barren region of Earth with no trees. In fact, the word tundra comes from the Finnish word *tunturia*, which means 'treeless plain'. Areas of tundra lie between the permanent ice of the far north and the northern forests of North America, Europe and Asia. They cover about 20 per cent of Earth's surface. They are some of the coldest places on Earth.



Reindeer graze on the Arctic tundra of Canada's Northwest Territories.

© Grambo Photography—All Canada Photos/age fotostock

Features

Tundra may be flat, hilly or mountainous. Little plant life grows on the bare or rocky ground. Tundra in coastal areas tends to be foggy. Snow covers the tundra for more than six months of the year.

Types of Tundra

The Arctic tundra lies in northern Europe, Russia, Alaska, Canada and Greenland. In these areas the winter temperature may be as low as -32°C (-25°F). The summer temperature may rise only to 4°C (40°F). Because of these cold temperatures, Arctic tundra has a permanent layer of frozen soil, called permafrost. Some permafrost reaches as deep as 456 metres (1,500 feet).

Alpine tundra lies farther south than Arctic tundra. Alpine tundra is found in high mountains above the tree line. (The tree line is the highest place where trees can grow.) Areas of Alpine tundra have short, cool summers and less extreme winters than Arctic tundra. Alpine tundra does not have a layer of permafrost.

Life in the Tundra

Only low-growing plants, such as mosses and shrubs, can survive in the tundra. Plant-like living things called lichens also grow there.

Tundra animals must be able to survive long, cold winters. Many birds live there in the summer, but few stay through the winter. Some common tundra animals are reindeer, Arctic foxes, snowy owls, musk oxen and polar bears.

Very few people live in the tundra. Arctic peoples, including the Inuit, tend to live in places where hunting and fishing can provide enough food year-round.

Resources

The ground of many areas of tundra contains coal, oil, iron ore, lead or other resources. Many companies have set up mining operations in tundra regions. However, some people worry that mining and oil drilling endangers tundra plants and animals.

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Sequoia National Park



Giant sequoia trees towering over a hiking trail that winds through the Giant Forest in Sequoia National Park, California.

© Elena Pueyo—Moment/Getty Images

Citation (MLA style):

Sequoia National Park. Image. *Britannica LaunchPacks: Biomes*, Encyclopædia Britannica, 20 Aug. 2024. packs-learn.eb.co.uk. Accessed 23 Sep. 2024.

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VIDEO

rainforest



Video Transcript

Tropical rainforests teem with rich and diverse life. Scientists estimate that more than half of the known plant and animal species live in tropical rainforests. More remarkably, the scientists believe that there are many other species within a rainforest that have yet to be discovered.

Tropical rainforests are home to many of the world's animals.

Encyclopædia Britannica, Inc.

Citation (MLA style):

Rainforest. Video. *Britannica LaunchPacks: Biomes*, Encyclopædia Britannica, 20 Aug. 2024. packs-learn.eb.co.uk. Accessed 23 Sep. 2024.

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taiga



Video Transcript

The taiga (or boreal forest) is a region of cold weather and conifer trees growing on wet, spongy land. It is found in northern Europe, Asia, and North America, just south of the frosty, treeless tundra. Many animals thrive in the taiga. Caribou (or reindeer), brown bears, lynx, beavers, moose, wolves, and snowshoe hares are just some of the mammals that make the taiga their home.

Many animals live in the taiga.

Encyclopædia Britannica, Inc.

Citation (MLA style):

Taiga. Video. *Britannica LaunchPacks: Biomes*, Encyclopædia Britannica, 20 Aug. 2024. packs-learn.eb.co.uk. Accessed 23 Sep. 2024.

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VIDEO

desert



Video Transcript

NARRATOR: What makes a region a desert? The answer is how dry it is and how many plants grow there. Deserts are very dry. But just because they are dry does not mean they are hot. The Gobi is a large area in Central Asia. It gets very little rain and can be very hot in the summer. But in winter it is very cold. A cold desert also covers part of Antarctica in a region where snow seldom falls.

Hot or cold, all deserts are dry.

Encyclopædia Britannica, Inc.

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