

Steppe

Steppe biome

What is it?

The word “steppe” means an environment consisting of wide temperate prairies, generally with hot dry summers and cold rainy winters. The steppes of the northern hemisphere are located within continents, between 30° and 50° latitude. In the southern hemisphere, this biome is less frequent and can be mostly found in South America. The climate of the steppe is fairly dry, with hot summers and freezing winters. As to its climate in Asia, eastern steppes are very different from western ones. In the east, rains do not exceed 60 mm a year, while western steppes can receive up to 400. As to temperatures, the average temperature of eastern Asian steppes is 25°C in summer and –15°C in winter, while in the west the average never exceeds 20°C in summer and 0°C in winter.

The lack of trees is due not only to the climate, but also to the large herbivores' intense grazing and sometimes to man's deforestation.

The steppe in the world

Temperate prairies are widespread in all continents. They are generally known as steppe but have other names as well, depending on the language of the geographical area where they are. European prairies (*puszta*) extend from Hungary to southern Russia and from there to Mongolia (*steppe*). In south-America, the steppe is in Peru and Bolivia (*puna*) and Argentina (*pampas*). In South-Africa and Australia, the steppe is called *veldt*, while the great expanses of grass of north-America are simply called *prairies*. There are also subtropical steppes in central Spain, Turkey, Nepal and Texas which are generally the result of destroyed forests.

Plants of the steppe

The steppe is a biome with herbaceous vegetation. The western steppes, which are more humid, are extremely rich in species. In the wet areas formed by melted snow, small trees and shrubs grow, especially poplars and aspens, which sometimes cluster into small woods. Conversely, in eastern steppes the vegetation is poorer and without trees.

Everywhere the vegetation mainly consists of graminaceous plants, herbs that sometimes can be 2 metres tall as in the great Chinese “grass sea”. Some species of pulse vegetables and composites also grow here.

In the south-American steppe lives a very rare and exceptional plant: the Titanca (*Puya raimondii*), a typical plant of the **puna**, i.e. the Andean steppe of Peru and Bolivia. It grows 4,000 metres above sea level and reaches 10 metres tall; it looks like a huge pineapple. It blooms and bears fruit only when old, generally when over one hundred years old.

Threatened by breeding and farming, it is rarer than it used to be, and in many areas it seems to be actually disappearing.

Animals of the steppe

The wide prairies of the steppe are the kingdom of large herbivores which often migrate far away in search of new pastures. Because of the lack of hiding places and the need to migrate, many herbivores of the steppe have grown to a huge size, have exceptionally adjusted to running and have very sharp senses. The typical herbivores of the steppe are: the European and North-American bison, the horse, native to Asian steppes, the pronghorn that lives in North-American prairies, and the guanaco, relative to camels and living in the Argentine steppes. Along with the guanaco, the pampas deer, a small cervid of the same size as a roe deer, also lives in south American pampas.

The bison

The bison is perhaps the most typical herbivore of the steppe. Until last century, there were two species of bison: the European bison and the north-American bison. The European bison is the biggest mammal in Europe. It is coated in thick, woolly fur, has a short and thick neck, a low and large forehead and upturned horns. Today, the European bison

has almost disappeared, decimated by hunting and by the disappearance of its habitat. Only few hundreds of heads survive.

The North-American bison is one of the biggest mammals on earth. It can weigh over one hundred kilos and reach 180 cm tall. Until the mid-nineteenth century, huge herds of bison used to run through the prairies of north-America.

Unfortunately, the fierce persecution carried out by planters and white hunters since the mid-nineteenth century has led this magnificent animal to the brink of extinction. Today, this species is recovering thanks to protection plans and to the establishment of wide reserves.

Small mammals of the Steppe

Amongst large herbivores live many species of small mammals that dig deep underground tunnels to escape predators. In south-America, there are different species of rodents: the guinea pig, now used as a pet, the viscacha and the tuco-tuco, that looks like a big hamster. As they dig the soil, these rodents keep raking up the layers of earth, thus helping to ventilate the land and reduce the surface concentration of mineral salts.

In north-American steppes live prairie dogs, rodents organised into complex communities and living in veritable cities dug in the ground. Prairie dogs have a very complex social life and communicate through a well-developed language made of gestures and calls. Some individuals mount guard near the entrances to their lairs, while others look after their brood: at the first sign of danger, the sentinels let out a cry to alert the community, and they all hide into tunnels. Prairie dogs graze all the grass around their colonies to prevent predators getting near without being sighted

In the Asian steppes live the yak, the mouflon and the onager or wild ass. Among small Asian mammals, let's mention the souslik, the Asian counterpart of the prairie dog, and the common hamster.

Other small animals of the Steppe

Hidden amidst the grass thrive many species of insects, especially grasshoppers, beetles and butterflies, which play the important role of pollinators. There are also many reptiles, such as the rattlesnakes of north-America.

The high number of herbivores and small animals attract many species of predators. Wolves in Europe and Asia and coyotes in north-America attack large animals, while foxes, weasels, badgers, stoats and Polar cats take small preys.

Birds of prey are also frequent visitors of the prairie: their sharp sight allows them to find preys even from far away, in an area which virtually offers no hiding places.

Animals of the Australian steppe

In Australia, the steppe covers nearly one half of the backcountry. The typical inhabitant of the Australian steppe is the kangaroo, but there are also many other species of marsupials, such as the Virginia opossum and the wombat, that looks like a small bear. Many Australian birds are no longer accustomed to flying: the emu and the cassowary are big, and, like African ostriches, are very good at running. The kiwi is a small nocturnal bird that cannot fly; it feeds on the invertebrates it can find on the ground with its smell and hearing. In Australia live impressive reptiles, such as the monitor lizard, the collared lizard and the moloch, a sort of 20-cm-long iguana with a thorny body. Man brought in animals that did not belong to the typical Australian fauna, such as rabbits, mice and dogs. Dingoes, dogs made wild, have replaced marsupial wolves, taking up their ecological niche.

Richness of the steppe

The steppe is a landscape dominated by large areas where man has left few traces of himself. Nevertheless, the steppe offers sights of rare beauty to those who venture amidst its boundless lands. But the steppe is not only interesting for the beauty of its landscape: it is rich in underground minerals and hydrocarbon fields. The flora of the steppe offers some medicinal plants, such as the eleutherococcus (*Eleutherococcus senticosus*), also known as Siberian ginseng.