

Steppe

Introduction

We are in Central-Eastern Europe and Central Asia, where the climate is characterized by hot and dry summers and cold rainy winters. The characteristic of these areas are the steppes, formed by extensive grasslands, few trees and a prevalently grassy vegetation. Among the fauna it is possible to find herbivorous animals, marmots, hamsters, foxes, wolves, weasels, amphibians and insects.

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.

Man and steppe

Peoples of the steppe: the Yis

Ancient and legendary dynasties have given origin to the peoples who now live in Russia, Mongolia, China, etc. Only a few ethnic groups remain in the steppe regions where they still follow their old lifestyles.

The Yis live in south-western China, in the Yunnan, Sichuan, Guizhou and Guangxi provinces and are now approximately 6.5 millions. Their lands do not allow them to settle permanently: the Yis are nomads who set up their own wandering villages, especially around the oases or lakes the region is dotted with.

The focus of tribe's life is the tent. Called yurt, it is shaped like a round dome. Its straight walls are made of branch frames kept together by leather straps. Since they are nomads, the whole yurt can be dismantled and taken away. When dismantled (it takes about two hours), the yurt may be loaded onto three camels or four horses. When in a new camp, the yurt may be mounted in three hours by two people. It is strong and can withstand strong winds and even a tiger on the roof.

The yurt is not the only important thing in nomadic life. The horsemen of the steppes are shepherds and hunters, and horses are of crucial importance, not only for riding. Horse milk, in the form of curds, powder, fermented or plain, is important fare, along with horsemeat. In addition, horse hides are used to make leather boots, bags, bowls, packs; they are used in war and are the measure of part of a man's wealth.

Horses are not the only animals reared by tribes. Sheep, cows and oxen are also common all over the steppe. Camels are mainly used near the driest regions.

The life of each Yi tribe hinges around the chieftain, named khahan. In general, he wields influence only within his own tribe, but, under exceptional circumstances, he may bring many tribes together by conquest and diplomacy. Other tribes may spontaneously join under his rule, either out of friendship or fear, into a powerful nation of warriors and horsemen.

The Scythians

Eurasian steppes and north-American prairies were inhabited by fascinating and legendary people and were the scene of important historical events.

In the 8th century b.C., a group of Indo-Iranian nomadic tribes got into eastern Europe and settled between the mountain range of the Carpathians and the river Dnepr. Herodotus, the historian, described them as skilful horsemen, fierce warriors and rich shepherds. The Greeks called them Scythians, and Scythia was the region between the Danube and the Don that these tribes militarily controlled. They traded with Greece, to which they sold salted fish, honey and furs.

The Mongols of Genghis Khan

In the early 12th century, many Turkish-Mongolian nomadic tribes, similar in language, culture and lifestyle, used to live in the steppe plateau of Central Asia. These groups had gathered into small tribes, mostly composed of one family, armed and determined to defend their pastures and cattle. The tribes were headed by the most powerful clans, who decided when and where to pitch camp or pasture their cattle and who to fight. The weakest families still had authority and kept possession of their animals, but had to pay a tribute to the ruling clan. Nomadic life did not make the tribes completely self-sufficient, so they often raided and foraged the rich neighbouring regions of China. China, to defend itself militarily and politically, skilfully took advantage of the disagreements existing among different chieftains, granting some

tribes honorific titles and food supplies in return for watching over its boundaries.

Later on, through the intense trades of Chinese and Muslim merchants, the Mongolian economy remarkably developed. The Mongols adopted paper money as a medium of exchange whose value was ensured by the Great Khan. The paper they used was made from mulberry bark, the bills were black and bore the emperor's seal. If a bill was damaged, the owner could change it at the imperial mint, paying three per cent of its face value for the service. In addition, they built hotels, markets, borders posts and many roads in the Mongolian territory.

The legendary Genghis Khan

The exact date of birth of Temujin (Genghis Khan's true name) is not known. According to Persian sources, he was born in 1155, and in 1162, 1167 or 1176 according to others. In 1206, Temujin, for his political and military skills, was appointed head of all Mongols with the title of Genghis Khan. From then on, his armies invaded the north of China and entered Peking. In 1215, the Mongolian empire stretched to Tibet and Turkestan. In a few decades, the Mongols invaded Afghanistan, went round the Caspian, the Russian plains and settled in Baghdad, the historical Arabic capital, killing the last caliph. When Genghis Khan died in 1227, the Mongolian empire was disintegrated by conflicts among its successors. China invaded Mongolia and set fire to the capital of the empire, but could not completely rule over its territory.

The ferocious Hunnish

The Huns were nomadic people of Turkish-Mongolian origins. Legends portray these people as fierce horsemen grouped into huge armies and armed with horn bows, bone arrows, snares and nets. In fact, the Huns seem to have been composed of a myriad small gangs, which were as ready to join forces as to fight each other. Once again, as the legend goes, the Huns spent their lives on horseback and used to wear the hides of wild animals until rotten.

The most famous Hunnish warrior is certainly Attila, who was elected king of the Huns in 443 and who, for his legendary ferocity, was named "the scourge of God". During his rule, Attila subdued many Germanic peoples and built up such a military power as to charge tributes to eastern and western empires.

American Indians

The Europeans gave the name of "Indians" to native Americans because in discovering the Americas Christopher Columbus thought he had reached the Far East, then called the "East Indies". When the first Europeans arrived, Indians were perhaps more than 5 millions, gathered in a high number of tribes. Many of them were nomadic hunters, although they also grew crops, especially maize. Bison were the favourite preys of many Indian tribes. Between the Mississippi and the Rocky Mountains lived the Comanche, the Arapaho, the Cheyenne, the Blackfoot and the Sioux, who were bison hunters. East, along the Great Lakes, lived the Algonquin and the Huron, good at fishing and hunting. The Creek, Cherokee and Seminole, settled between the Appalachians and the peninsula of Florida, were farmers. In the south-west lived the Apache, the Hopi and the Navaho, who lived in permanent villages and were engaged in farming. The Indian civilisation was based on a complex culture, with values that were very different from those of European cultures. The community side of social life was attached a lot of importance and was strengthened by rites and dances. Indians did not have private property and the land was everyone's.

In the second half of the nineteenth century, the white settlers began to move into the plains, to exterminate bison and take possession of the land. Many Indian tribes, for instance the Sioux, strongly opposed to the settlement of those who deprived them of their land and bison, their most important means of support.

Frightening wars broke out. The white prevailed, with their modern weapons, such as guns, cannons and repeating rifles.

In the late nineteenth century, the Indians of the United States and Canada both risked disappearing.

Today, one half of Indians live in reservations and the rest in small villages of the west, often in degraded social conditions. In the last century, native Americans have got their act together and have engaged in struggles to claim some of their civil rights.

Mines, Industry and crafts

As well as the extraction of hydrocarbons, the steppe contains many other underground bodies: copper, molybdenum, phosphor, gold (4,632 kg in Mongolia alone) as well as limestone and dolomite.

In addition, these lands are rich in underground fields of bismuth, cadmium and thallium, which are essential for electronics.

Mines have always been the main means of support for many people, who have built their settlements right against the extraction areas.

Industry is still in its infancy and is almost essentially based on wool, leather (leather clothes and shoes), cashmere, meat and dairy products. Heavy industry is based on the electric sector, mineral and forest products and building materials. Crafts, as well as covering the same activities, boast a centuries-old tradition in silver and semiprecious stone working.

Threatened steppe

Agricultural exploitation

The agricultural exploitation of these areas has caused a series of inter-linked consequences: the animal and vegetal species of the steppe community are increasingly threatened. Hole diggers, such as moles, damage the crops; larger grazing animals compete with native species, and predators, such as wolves, threaten the survival of cattle. To defend human activities, plans for the extermination of "harmful" species, especially hole diggers, were put forward, but it was soon acknowledged that without the latter the structure of the soil would start deteriorating. In addition, the overexploitation of pastures by farm animals and the habit of leaving the soil without vegetation between one harvesting and the next resulted in the loss of the thin surface layer during storms. This destruction, which slowly leads to desertification, occurred both in the large plains of north-America and in the steppes of central Asia.

Pollution

Kazakhstan has been dramatically damaged. In the Sixties, corn was intensively grown in the country, but this plan caused many ecological disasters. The course of the rivers Syr-Darya and Amu-Darya, tributaries to Lake Aral, was diverted to irrigate the fields and as a consequence the lake waters dropped down. The port of Aralsk moved away from the lake and the village emptied. Fish died because water became much saltier, rains decreased, sand, salt and dust rose into storms of hundreds of kilometres. Birds and animals left the delta of the river. In the meantime, the chemical residues of farming seeped into the rivers and reached the drinkable waters of Kazakhstan, while the Kazakh steppe died out and got dry and salty because of excess farming. Luckily, since the Sixties environmental awareness has grown all over the world, and now, before a plan is implemented, an "environmental impact assessment" is carried out to assess beforehand all its potential consequences on the different elements of the environment. In addition, the European Community has developed a plan, called "Takis", aimed at boosting economical growth in the perspective of the sustainable development of the new independent States resulting from the collapse of the former Soviet Union (Armenia, Azerbaijan, Belarus, Russian Federation, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Mongolia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan). The plan concerns farming, the environment and nuclear safety, both locally and across borders.

The bison

Even if the American bison, also called buffalo, and the European bison have always been hunted by man, the introduction of thorses and firearms have caused their number to dramatically decrease, seriously endangering the survival of this species. When in Europe the number of heads dropped to six, they began to be protected and their number restarted to grow, putting one herd back together. Today, approximately 2,000 European bison remain, all coming from that original group of six. In America, their natural habitat has been damaged since the seventeenth century by the

coming of European people. Buffaloes in particular were hunted by European planters: the legendary Buffalo Bill killed 4,000 in one year. This animal had almost disappeared when reserves and sanctuaries were established to protect the few surviving heads. The operation was successful: 40 thousand heads are now there for everyone to see.