

Introduction - Hungary

Hungary is situated in the middle of Europe, at the central and Western part of the **Carpathian Basin**. By its topography and geographical conditions it may not be considered a separate unit but is closely connected to the areas of the neighbouring countries. Due to the characteristics of the Basin the majority of the area of Hungary is flat, only one third exceeds 200 m elevation, and merely 2% goes above 400 m sea-level. The highest peak is Kékes-tető (1014m), the lowest one is the flood plain of river Tisza (75.8m), in the south of the country. **The characteristic regions are the Northern and Trans-Danubian Mountains of medium height and the two basins: the Great Plain and the Small Plain.** The hills of the two mountains are mostly covered with forests.

The backbone of the water system is given by **two big rivers**, the **Danube** and the **Tisza**, their length in Hungary is 417 and 598 km respectively. A significant part of the natural watercourses is originated in the Alps and Carpathians and flows into the two great rivers in the territory of the country. **The largest lakes** are Lake Balaton (598 km²), Lake Velencei (26 km²) and Lake Fertő (322 km²) at the Austrian border with 82 km² in Hungary.

Forest characteristics and forest types - Hungary

The majority of Hungary belongs to **the European deciduous forest zone**, parts of the Great Plain to the **forest-steppe zone**. However, the preserved original plant cover of Hungary is merely 9 %.

The large lower parts are characterised by small **amounts of precipitation and extreme temperature changes**. The naturally forest-covered areas are the Western part of the Trans-Danubian region and the mountains – generally higher than 400m above sea level. Here the annual precipitation generally exceeds 600 mm required for the maintenance of forests. In the lower regions forests could only develop where the water level is not too high but within reach of the tree root or on flood plains. In the lack of such water resources only brush lands may develop that can hardly be called forests. As forests are needed at such places as well to protect or improve soil, agricultural areas or to provide recreation areas, drought tolerating species are planted in these areas (usually trees that are not indigenous to the area). It is clear thus that the regional **location of Hungarian forests is determined by climate conditions** – mostly the annual amount of precipitation and the related air humidity – and the presence or lack of **supplementary water resources**.



Thousand years of human intervention has changed the natural environment significantly. As well the aspects of forests are changing since the beginning. This is due to the natural circumstances and the human interventions. There is no forest in Hungary that has avoided human intervention, but even if it were so, human effects – river regulation, air pollution – could not be eliminated.

The proportion of **nature-like forests** is about 52 % in Hungary. The rate of cultivated forests that primarily supply wood is about 48 %.

Typical and exceptional fauna and flora species in forests - Hungary

Beech (*Fagus silvatica*) forests are primarily located in the mountains of medium height, at 600m above sea level and in the lower but cooler and more precipitated Trans-Danubian regions. Today in Hungary beech forests are of the greatest wood volume and are also extraordinarily important in environment and nature protection.



The **oaks** (*Quercus sp.*) are the most characteristic species in the country. They form forest stands with a number of other species. **Hornbeam-oak** forests are the stands of mounds and hills of medium height with a characteristically closed canopy level. Beautiful associations of the kind may be seen in more humid parts of the Great Plain. In their typical two-storied stands beside the outstanding trees of sessile and pedunculate oaks hornbeams comprise a second canopy underneath.





Turkey (*Quercus cerris*) and sessile oak (*Quercus petraea*) forests are the most widespread associations, common in the mountains, mounds, mainly between 250-400 m above sea level. The shrub and herbaceous level of turkey and sessile oak forests is usually very rich due to the light-demanding construction of the canopy of both species they permeate much light.



The **loess-oak forests (*Quercus robur*)** – below 200 meters above sea level – are a special relic forests with nature conservation priority of which only a few acres preserve the marginal lowland vegetation before human intervention period.

Beside the climate-zonal forests, the gallery forests accompanying rivers have a not negligible conservation, ecological and economic role.

The so-called **hardwood-, oak-ash-elm grove forests** follow the higher flood areas of our larger rivers and are primarily developed due to the presence of water which today hardly ever is flooded.

The main species are pedunculate oaks (*Quercus robur*), Hungarian ashes (*Fraxinus angustifolia ssp. pannonica*) and the fluttering elm (*Ulmus laevis*) which unfortunately decline due to elm tree disease.

Willow-poplar flood plain groves are the associations of the lower flood areas of the Plain rivers. They are commonly characterised by the water that floods their stands for a long time, many times a year. The major species of these associations are white willows (*Salix alba*), black and white poplars (*Populus nigra* and *Populus alba*) and the bush-willows (*Salix sp.*). Today, on their territory due to intensive forest management the **Euramerican poplars** have been planted as well.

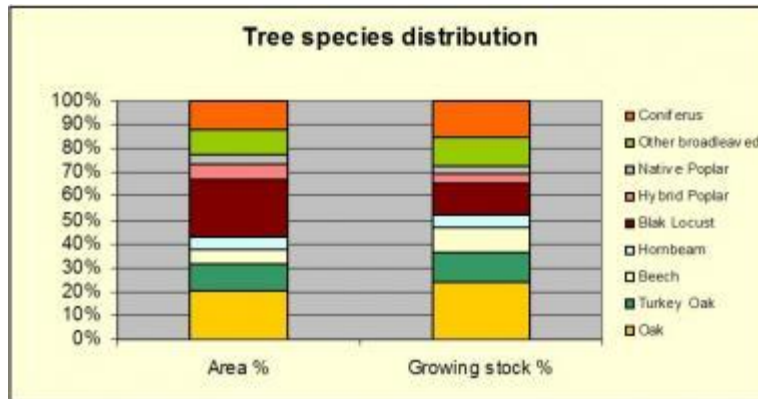


The primary cultivated forests are the **black locust „acacia” woods** (*Robinia pseudoacacia*) with short rotation periods that. „acacia” is the most common species in the country’s forests. They have been acclimatised from America many hundreds years ago. They are especially important in areas of poor soil, where often this is the only one species that may be planted for forests. Its wood may be utilized in many ways (significant firewood as the wood is burning even when moist). Moreover the „acacia” **nectar** is a good feed for bees making honey.



Climate conditions in Hungary are not considered to be optimal for the **pine forests**. They usually form single species forest, or only Austrian and Scotch pines (*Pinus sylvestris* and *Pinus nigra*) are mixed with each other. The latter two are of primary importance in Hungary, but you also see spruces and larches (*Picea abies* and *Larix decidua*). Single-species stands are ecologically instable as many pests spread in artificially planted pine forests, thus endangering and risking forest management.

The rapid growth of *Euramerican poplars* (*Populus x. euramericana*) – planted typically on flat or flood plain areas –facilitates intensive economic activities. Due to the mechanical management trees are planted regularly and thus do not provide the expected landscape, but a considerable economic demand (like paper) is provided for from these stands.



Wildlife

Game stock is the organic part of forest biocoenosis. **Forests may not be imagined without game**, they belong to forests like fresh air, humming birds, bugs, mushroom, colourful flowers, rocks or springs.



In large forests primarily **red and fallow deer, mouflon, roe and wild boar** (*Cervus elaphus*, *Dama dama*, *Ovis musimon*, *Capreolus capreolus*, and *Sus scrofa*) can find perfect habitat. This does not mean that so called small games – hares, pheasants (*Lepus europaeus*, *Phasianus colchicus*) – are missing from Hungarian forests. However, their occurrence is not as frequent as in flat areas with smaller forests.





Experts unanimously agree that **big game stock has exceedingly multiplied**, and in some places animals cause serious damages to forests, mainly through their feeding. Game management must be considered carefully so that the game stock volume would not hinder forests themselves and their development, and by damaging and exhausting their habitat animals should not be their own enemies.

Over the past decades, due to the conservation interventions, **predatory mammals** such as wolves, lynx, or wild cat and golden jackal (*Canis lupus*, *Lynx lynx*, *Felis sylvestris*, *Canis aureus aureus*) have re-appeared in the highland forests where they were previously excluded or thinned from.

We boast world record keeper fallow deer and wild boar trophies, but red deer and roe hunted here are also considered among the best of antlers in the world.

Forms of nature protection such as national parks and Natura 2000 sites - Hungary

Nature protection

The intensive **protection of natural values in forests** (plant and animal species, geological values) is enforced by declaring them protected and strictly protected. These are national parks (10), landscape protection areas, protected natural areas, and natural monuments. 9,6 % of the national territory is **under legal protection**.





The history of the domestic nature conservation is in many threads related to forestry this is proved by the fact that the proportion of forests in the protected area is more than 50 %

Within protected natural areas **forest reserves** are a unique nature protection category, the primary purpose of which is the protection of natural or nature-like forest life communities and the research aimed at understanding natural processes.

Following the EU-accession the **NATURA 2000** network had to be established in Hungary as well. The networks significant part is located on forestland.

Welfare effects, multiple environmental, nature protecting and recreation functions of forests are increasingly appreciated by society. Forest sector facilitates the prevalence of these functions by welfare forestry, which is made obligatory for forest managers by the Act on Forests.

Welfare forestry includes all forestry activities aiming the facilitation of socially useful services of forests, the beautifying of forests and the provision of a nice environment and opportunities for visitors to recreate.

The managing need for this special area emerged with the almost unbearable burden of visits that fall on forests in popular excursion places easily approachable from cities as a consequence of the increasing population.

The welfare services of forests are and will be granted free. This burdens both the forest owner and the state supporting public welfare developments, so it is well expected of visitors to preserve forest conditions for those visiting next.

Health stand

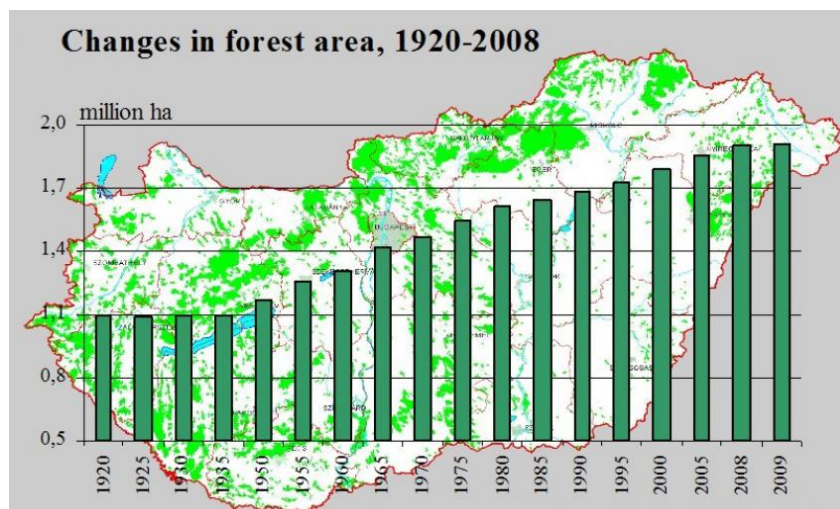
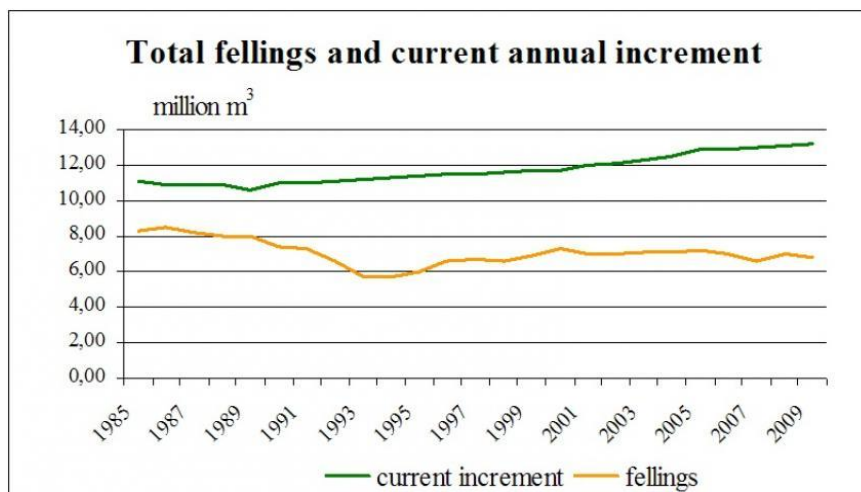
Recently we can hear a lot about the harmful effects of human actions and the deterioration of natural conditions on forests. The crucial danger for the stability of moderate-climate forests is said to be *air pollution*, from the Seventies of the last century, crossing nations and borders in its effects, and climate change, from the Ninties. Indeed, air pollution brought forth the destruction of forests in many European regions, yet in Hungary major forest damages directly related to air pollution has not been observed.

Hungary has been using a health status evaluation, so called monitoring system for long decades, which is considered extensive according to European standards. Data thus collected give a clear overview about the changes of forest conditions, by which protection against possible damaging agents may be planned in advance.

Organization of Forestry - Hungary

The forest land area of Hungary has been gradually increasing in the last 80 years. This is due to the accomplished large-scale afforestation and tree planting carried out under the direction of professional foresters. As a result, **the forest land area** which in 1921 was hardly larger than 1 million hectare has **exceeded 1.9 million hectare by today.**

The last three decades brought extraordinary historic changes in Hungary, from the change of political system to the accession to the European Union. During the process proprietorship has fundamentally been transformed, forest management structure has been modified; management related goals and conditions have been changed as well, similarly to the legal and institutional background.



In Hungary the share of state-owned forests is 57 %, community-owned is 1 % and 42 % of forests are private. A long-term purpose, primarily based on afforestation, is the large-scale increase of private and community owned areas. The highlighted objective of forestry policy is the structural improvement of the over-divided estate system that hinders private forest management, and the establishment of viable management organisations and partnerships.

The management of state-owned forests is primarily performed by **22 state forest management corporations**. However, other national institutions – like water resource directorates, national parks – are also managing state-owned forest land areas.

The share of **community ownership** is relatively small, mostly managed by municipalities of villages and cities.

The majority of **private forests** are undivided joint properties. Regarding management the most common form is **natural persons** – having assignment contract –, but the share of corporations and co-operatives is also considerable. A special forest management type is the institution of the integrator that handles forest land areas in one's own right and performs professional directing activities in areas belonging to other forest managers or contracts with them to perform particular forest management tasks.

To ensure the interests of society and nature in the management forest can be managed only in accordance with the so-called district forest management plans. The **district forest management** plans are prepared and their compliances are verified by the forestry authority in both the public and private forests.

