

Forest characteristics and forest types - Slovak Republic

The area of forest land resources has been growing in a long term. Now is forest area found from National forest inventory (2005-2006) about 2,173 thousands ha and share of forest is 44.3±1 % from total land area. Forests are in accordance with valid forestry legislation classified by their function into commercial, protective and special purpose forests. Present state and development of forest categories is about 2/3 of commercial forest, 1/6 protective forests and 1/6 forests with special purpose. Category of protective forests includes stands with prevailing protective (ecological) functions. Protective forests are being declared on extraordinarily unfavourable sites, in high mountainous locations, in the zone of dwarf pine for securing soil protection and others.

In general, Slovak forests are diverse with a relatively balanced tree species composition, white beech covers the highest proportion of the area (1/3). Follow species as spruce (1/4), oaks (1/10), fir, larch, hornbeam, maple, ash, and other broadleaved trees. Not only favourable total tree species composition but particularly species diversity in respective forest stands is an indicator of stability degree and forests resistance. The area of the forest stands according to the degree of mixing coniferous and broadleaved tree species provides an overview on species diversity of forest stands. In Slovakia, broadleaved forests dominate (they cover approximately 50 %), while pure coniferous stands (with the proportion of coniferous tree species equal to or greater than 90 %) cover only 20 %. The proportion of coniferous and broadleaved tree species in individual regions corresponds approximately with the average values for the whole country.



Share of Slovak forest is about 45 % from total land

Typical and exceptional fauna and flora species in forests - Slovak Republic

Slovak forests constitute habitats for much typical middle European mammalian. Hunting has a long historical tradition. Main species are red deer (exemplar number from hunting statistics is about 40-50 ths), roe deer (80-100 ths) and wild boar (20-30 ths). Abundant are also introduced species such as mouflon (10 ths) and fallow deer (8-10 ths). Small animals represent European hare (150-200 ths) and European rabbit (only about 1 ths.). Feather animals include mainly pheasant (200 ths) and partridge (10-15 ths).



Wild boar belong to main hunting game



*Roe deer is in Slovakia
very numerous*

Populations of large predators, such as bear, wolf and lynx have statistically increased in the last period. According to actual game census in Slovakian forests, there live more than 1000 bears, same number is for wolfs and lynxes. With respect to other rare game species, their numbers inter-annually increased except for capercaillie, whose numbers fell down comparably. Shooting of rare game species (e.g. brown bear, European wolf, or European lynx) is strictly regulated in Slovakia. From 50-60 individuals of bear are planned for shooting every year; only 10-20 were shot. In 2010 there was a significant increase in the chamois numbers (600-700). In central European forests, there is very rarely occurrence a few herds of European bison in open nature.

In 2001, rescue programmes were developed for 2 animal species – *Emys orbicularis*, and *Rupicapra r. tatrica*, and supporting material was developed for rescue programmes for 2 animal species - *Umbra crameri* and *Aquila pomarina*.

Forests of Slovakia are located in various ecological conditions, which makes the forest very variable, and not only from a diversity aspect. These conditions had created many forest types with its typical vegetation. The main tree species that create altitudinal vegetation zonality are sessile oak, European beech, silver fir, Norway spruce and dwarf pine. In Slovakia, we can recognize eight altitudinal vegetation zones: Oak, Oak-Beech, Beech-Oak, Beech, Beech-Fir, Spruce-Beech-Fir, Spruce, and Dwarf pine.

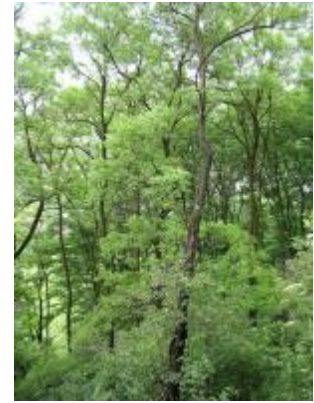
Sessile oak has its ecological and production optimum in 3rd altitudinal vegetation zone. Sessile oak is followed by **European beech**, which has its ecological as well as production optimum in 4th altitudinal vegetation zone. However, beech is known for its relatively wide ecological amplitude, thus it can grow quite well on various sites in various altitudes. In some cases, when the particular conditions are met, it can even create a timberline. European beech very often creates forest stands along with **silver fir**. Though, in contrary, silver fir has significantly narrower ecological amplitude. **Norway spruce** dominates in higher elevation above sea level, and it is the main species that creates the timberline over the highest mountains in Slovakia. Its production optimum is said to be in the 5th altitudinal vegetation zones, where a length of growing season, sufficient amount of precipitation make the good conditions for spruce to grow very well. At the timberline, Norway spruce neighbours on **dwarf pine**. It dominates in 8th altitudinal vegetation zone, though it can grow in lower altitude along with spruce, but only sparsely.



Spruce forest cover ¼ of all forests, predominantly in northern and high altitude regions



Most abundance has beech, which often reaches good wood quality



Black locust belongs to introduced tree species

As in other countries, also in Slovakia, there are several species of flora that are endangered and under state protection. Totally, there are about 800 taxons under state protection (according to Resolution of the Ministry of nature conservation of Slovak republic No. 93/1999 Coll. of Laws). Next, endemic vascular plants consist of 220 species. Then, there are 7 species of higher fungi, 140 of lichens, and 95 of bryophytes, which are critically endangered. Endangerment of vascular plant in Slovakia is as much as almost 30 %. In 2001, rescue programmes were developed for the following species of vascular plants: *Drosera anglica*, *Orchis coriophora*, *Ophrys holubyana*, *Rhynchospora alba*, *Lycopodiella inundata*, and *Scheuchzeria palustris*.

The following tree species have been introduced in Slovakia, so far: Douglas fir, black locust, Euroamerican poplar (almost 0,5 %), Grand fir, eastern white pine, red oak, sweet chestnut, horse chestnut, box alder. The most prevailing is Black locust with the proportion of almost 2 %.

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

Nature and landscape protection

Forests play a decisive role in the creation and conservation of the environment and maintenance of ecological balance. The total area of forests in protected areas including their buffer zones was 1.1 mill. hectares (23.1 percent of the national territory). Forest cover in the areas under 2nd-5th level of protection is a staggering 72.6 percent. The State Nature Conservancy of SR (SNC) registers a total of 9 National parks (NP) - Tatra National Park, Pieniny National Park, NP Low Tatra, NP Slovak Paradise, NP Low Fatra, NP Muránska planina, NP Poloniny, NP High Fatra and NP Slovak karst, 14 protected landscape areas

(PLA), and 703 small-scale protected areas as national nature reserves, nature reserves, nature monuments and protected sites .



Status of chamois is in last years increased and stabilized



Rare central European herbivores represent a few exemplars of European bison



Rescue programs develop for preservation of rare vascular plants (Drosera)



Carpathians primeval forests are under UNESCO protection (Stužica)

Natura 2000

The national list of proposed Sites of Community Interests (pSCIs) has been approved by the Government of SR (Decree No 239/2004). This official commitment started development of a national network of Natura 2000 sites, an integral part of a wider European network of these sites. The list contains 382 pSCIs on the total area of 573 thousands hectares (11.7 percent of the Slovak territory). 86.5 percent of these areas are situated on forest land.

Forest-related sites nominated for UNESCO protection include the following: karst valleys of Slovakia; nature reserves of Tatra NP; natural and cultural landscape of the Danube River; mycoflora of the Bukovské vrchy Hills; and the Carpathian beech primeval forests featuring NNR Stužica – Bukovské vrchy Hills, NNR Havešová, NNR Rožok, and NNR Vihorlat. In a broader context of cultural and spiritual dimension of forests, 477 different sites with 1,317 specimens of protected trees have received special acknowledgement. On top of that, there are a number of other protected sites and protected landscape elements (arboreta, orchards, gardens, etc.) found in Slovakia. Special Protection Areas (SPAs) represent another category

of Natura 2000 sites. The total area of proposed and designated SPAs currently amounts to 1 154 thousands hectares of which 51.6 % overlap with the existing network of PAs. The area of already designated SPAs is about 357 667 hectares.

Organization of Forestry - Slovak Republic

The forests under the ownership of the state (share 60 %) are being managed by the state organizations of forestry as follows: Forests of the Slovak Republic, state enterprise, (50 %), Forest-Agricultural Estate, state enterprise, (1 %), State Forests of the Tatra National Park (2 %). These organizations belong to the competence of the sector of the Ministry of Agriculture of the Slovak Republic. Military Forests and Estates of the Slovak Republic, state enterprise, Pliešovce (4 %) belongs to the competence of the sector of the Ministry of Defense of SR. The forests under the ownership of the state are being used by the school facilities (3 %), like the Technical University in Zvolen, Secondary Forestry Schools in Banská Štiavnica, Liptovský Hrádok and Prešov on the base of the leasing contracts with the Forests of the Slovak Republic, state enterprise.

The non-state sector comprises the private (12 %), municipal (10 %) and church forests (3 %), as well as forests in shared ownership (24 %).



A legal and organizational form of subjects in the non-state sector consists of land communities with or without legal subjectivity, associations founded according to the Civil Code, business companies, natural persons recorded for business activity or without recording, as well as special units (commercial, contributory) of municipal office.

So far, the accessibility of the forests for public is not restricted, except for Military forests.

More as 95 % of forest in Slovakia are assessable to society