EVOLUTION AND DISTRIBUTION OF FOREST VEGETATION

András Róbert*

* University of Oradea, Faculty of Environmental Protection, Gen.Magheru st., no.26, 410048, Oradea, Romania, e-mail: robikati@gmail.com

Abstract

Evolution and distribution creates forms and transforms the biological environment, where not exempt any forest environment. These changes can bring both benefits and failures of the forest ecological, economic and social performance.

Key words: vegetation, distribution, evolution, species, environment.

INTRODUCTION

The current form of forest vegetation is the result of developments occurring within a few million years. Development was influenced by climate change, which had an impact on the distribution of plants both the globe and on smaller surfaces. The distribution of species formed and modified human development, creating food, shelter from the start, and in modern times has influenced the whole economy.

MATERIAL AND METHODS

The Research Material is a basin with an area of 1200 ha. Covered by vegetation forest which is part of National Forest Fund.

The research methods are the inventory of species which forms arbor (forest vegetation), calculating of proportions which are presents, establishing the health status and vegetation and data processing. Information and documentation from the archives of specialized institutions, books, specialized magazines.

RESULTS AND DISCUSSION

Evolution of forest vegetation

Due to environmental conditions, the forest since its appearance until now was and is in a continuously change and evolution, but with a different dynamic in the geographical area occupied. At first these developments only due to natural factors, but after the arrival of humans appeared and anthropogenic influences.

To determine the stages during the development of forest vegetation was used some proper research methods, namely:

- Palaeo-botany method, which consists in uncovering and researching scrap fossil plants found in different layers of the earth's crust.
- Polenanalythical method, which is by researching pollen preserved in peat deposits and soil. These methods can be appreciated, as the depth at which are the species involved and the geological time in which they lived.

Based on these and other research methods the creation of forest is estimated to be the Paleozoic timescale, when the plants still had a small waist these were the basic plants. Subsequently due to hot and humid climate that formed vascular cryptogamic appear lush forests.

Appearance of gymnosperms was in the timescale was Mesozoic known for dynamic development and at the end of this timescale appear angiosperms.

In Neozoic, cryptogamic and gymnosperms enter into a regression, leaving gradual angiosperms, which acquires growing development.

The cooling climate from Quaternary was causing a change in forest vegetation dynamics. By appearance of glaciations the forest vegetation warming enters in migration causes a reduction in woodlands areas entailing fewer species. The glaciation effect in our country was felt only in the mountainous regions of post-glacial evolution of forest vegetation that differs from the development of forests in central Europe. Palynological research confirms the almost permanent presence of pine forests during glaciations, which covered mountain peaks climbing near glaciers.

During post-glacial forest vegetation enters in migration that causes a constant evolution process by which arises the current structure of forests. After melting glaciers due to global warming to first install a typical tundra vegetation and then the Pine, Chestnut, mixed forest, Phage phases the latest maintained until today.

Post-glacial forests evolution phases in our country:

- Pine Phase, characterized by a cold and dry climate, with a dominance of Scots. At lower altitudes was reported the presence of spruce, mountain pine and Zambra.
- Shift from pine to spruce Phase, is characterized by a smooth warming climate, allowing the presence of spruce at lower altitudes and start zoning of forest vegetation.
- Spruce and oaks mixed Phase oak appeared due to global warming, which causes a shift to higher mountains areas of spruce and pine. This causes the clear latitudinal vegetation zones of the forest.
- Hornbeam Phase, hornbeam presence is due to the lifting of air humidity and climate warming and forms a band between spruce forests and oak one.

- Phage phase, is the largest sub-area of vegetation and is characterized by a rapid spread by invading and substitute the hornbeam. Phages causes a shift altitudinal coniferous and push this specific forest to the hills and plains.

Human intervention has brought drastic changes in the distribution and structure of forests. These changes have reduced the forests, virgin forests ended to became cultivated one replacing, modifying the composition, species natural extinction, replacing natural forests with the artificial introducing exotic species, altering the genetic structure of populations and so on.

Distribution of forest vegetation in the country

Both forest vegetation and its distribution are subject to the physical environment of the ecosystem (biosphere), which is the natural development area of forest vegetation. The physical environment of the ecosystem consists of elements of landscape such as rock, soil and climate.

The topography influences local climate, soil depth and age, and indirectly hydro properties with their chemical and biological vectors. Climate is a key factor regulating soil with the spread of plant species. Through its constitutive elements work as radiant energy that provides light and heat from the ground, water, air movement and atmospheric composition.

Soil provides space for the rootsystem of plants, and their supplies of water and nutrients. In our country in terms of the vegetation is different, the alpine zone, the forest zone and the steppe zone (These upon P. Enculescu classification).

After Doniță (1992) vegetation zones can be classified according to the nature of species and territorial units large components as vegetation areas and subareas (in latitude) and floors and undergrowth vegetation (in longitude).

In our country where landforms forest distribution is as follows: 51.9 % mountain, hill 37.2 %, 10.9% plain.

Distribution on phytoclimatic levels of the forest: subalpine (F Sa) 1.2%; mountain spruce forests (FM3) 13.6%; mixed alpine (FM2) 20.0%; mountain - premontan the beech (FM1 + FD4) 17.0%; hilly evergreen beech forests and beech forests goruneto (FD3) 16.1%; hilly quercus (FD2) 16.4%; quercus hilly with English oak (FD1) 4.7%; lowland forest (CF) 6.0%; steppe (Ss) 2.5%; delta and floodplain 2.4%.

The distribution of forest species and groups of species: spruce 23%, fir 5%, other 2% resin, 32% beech, oak, 17%, different hard species 15%, different soft species 5%.

Distribution of forest vegetation in the catchment Bough Minor

Stands this basin are located in the molidişurilor pure (50%) of mixtures of spruce, beech (38%) and pure mountain beech forests (12%).

Edaphic, climate and existing geological conditions facilitate the existence and growth of a large number of species (spruce, beech, larch, sycamore, various deciduous, forming either pure stands or mixed stands.

Forest formations and forest types

Largest area is occupied by pure spruce stands higher productivity (31 %), followed by higher productivity molideto - beech forests (18 %) and pure beech forests of medium productivity (12 %). Regarding the timeliness of forest types is noted that the majority in this basin are fundamental natural stands higher productivity (53 %) followed by artificial high productivity (23%) middle stands fundamental natural productivity (18 %) and artificial stands of medium productivity.

Artificial Tree stands are made of pure spruce stands (from plantations) and mixtures of spruce, fir, beech - beech forests milodeto. These stands are very good conditions for growing , raising potential station. In this basin are less productive stands, fundamental natural lower productivity and poor functional, and there is no question of such stands recovery or ecological restoration.

CONCLUSIONS

Small Bough basin is a favorable area from all points of view for efficient and successful forestry activity. Stands of performing optimally vegetation in basin by an accumulation of good wood that meet economic roles of forest, providing feedstock profile for companies in the area. Maintaining biodiversity in climatic conditions facilitate the work of Foresters.

REFERENCES

1. Florescu I., 1981, Forestry, Edit. Didactică şi Pedagogică, Bucuresti.
2. Fodor Katia, 2007, The ecology of forest ecosystems, Edit. Universității din Oradea.
3. Giurgiu V., 2005, Optimal compositions of Romanian forests, Edit. Ceres, Bucuresti.
4. Norocel-Valeriu N., 2005, Forestry Course, Universitatea Transilvania din Braşov.
5. Târziu D., 1997, Pedagogy and forest stas, Edit. Ceres Bucuresti.
6. * * *, 1989, Arrangement 1989, Institutul de Cercetări şi Amenajări Silvice, Braşov.