SOILS AND SPECIFIC VEGETATION OF THE SUCEAVA RIVER BASIN, ROMANIA

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***Abstract*:** *In this paper, we present the soils that are found in the Suceava River basin, soils that have certain distinct features in terms of parental material but also of their physical, hydric, and chemical properties. Both alluviosols and certain gleic, salic, and salinized subtypes are found, i.e. soils that are influenced by groundwater located at shallow depths and which influence their features, fertility, and occupancy. Of the total area studied of 87,552 ha, forests occupy quite small areas, i.e. 19.34% compared to 44.66% by the forests of Suceava County, Romania. Moreover, at the level of our country, Suceava County has the highest degree of afforestation in the country, i.e. 52.88%, which is one of the reasons why it is worth studying, protecting, and highlighting. As for the zoning of vegetation in the Suceva River basin, there are both forests and meadows. Two sub-areas are present: the beech area and the sessile oak area. It is important that the forested area at both Suceava County and country level, where soils are not suitable for agriculture, be forested. There is also a need for afforestation of those soils that are found spread over large slopes, where there is a risk of landslides, erosion for better use, and conservation of these soils.Vegetation acts as a protective screen on the soil limiting the amount of water drained on the slopes, reducing the striking force of raindrops, and reducing areolar and linear erosion. Human intervention by deforestation and improper cultivation technologies favours accelerated erosion. In the forest area, soils are highly acid, there are fewer nutrients, poorly humified, and forming dark raw humus which causes reduced biological activity. Vegetable residues are very importantȘ in deciduous forests, two or three times more nutrients are obtained compared to evergreen forests. The territory studied falls within the area of silvostepe, with two subzones: the beech area and the sessile oak area.*

Keywords*: soil, vegetation, floor, river basin*

INTRODUCTION

The area studied falls within the area of silvostepe, with two subareas or floors: the beech area and the sessile oak area. (BĂCĂUANU, V., 1989, 1980; COTEȚ, P., 1973)

Forests, which occupy the highest areas of the territory, consist of a mixture of hard and soft woods such as beech, European hornbeam, oak, ash, poplar, maple, linden, cherry, sycamore. (ORGHIDAN, N., 1969; POSEA, GR., et al, 1974, 1976) There are also other woods such as elm and willow. (CHIRIȚĂ, C., et al., 1967)

In recent years, soft woods have been replaced by acacia, and only spruce has been planted on the slopes of the area. All these woods constitute a rich foriest fund, occupying an area of 1,088.44 ha. (MARȚOLEA, I., 1986)

Both forests and herbaceous vegetation contribute, to a large extent, to the creation of a cooler climate throughout the studied area. (CASIANA MIHUȚ, NIȚĂ L., 2018; MIRCOV V.D., et al, 2016) At the same time, they milden the dry climate of silvostepa, while favouring optimal conditions for the development of other woody species in the neighbourhood. (SMULEAC LAURA, et al., 2012; RĂDUIANU, I., D., 2009; PASCU, R., M., 1983)

MATERIAL AND METHOD

The first stage of the work presented below was the creation of a database. A recognition of the area studied and a delimitation of geographical boundaries was carried out, after which it continued with the access of public data, from Suceava City Hall, maps, and literature.

RESULTS AND DISCUSSION

In the basin of the Suceava River, forests occupy an area of 19.34%, compared to the total share of the studied area of 87,552 ha, i.e. 44,66% of the area of Suceava County, which holds the highest degree of afforestation in the country, i.e. 52,88% (Figure 1).

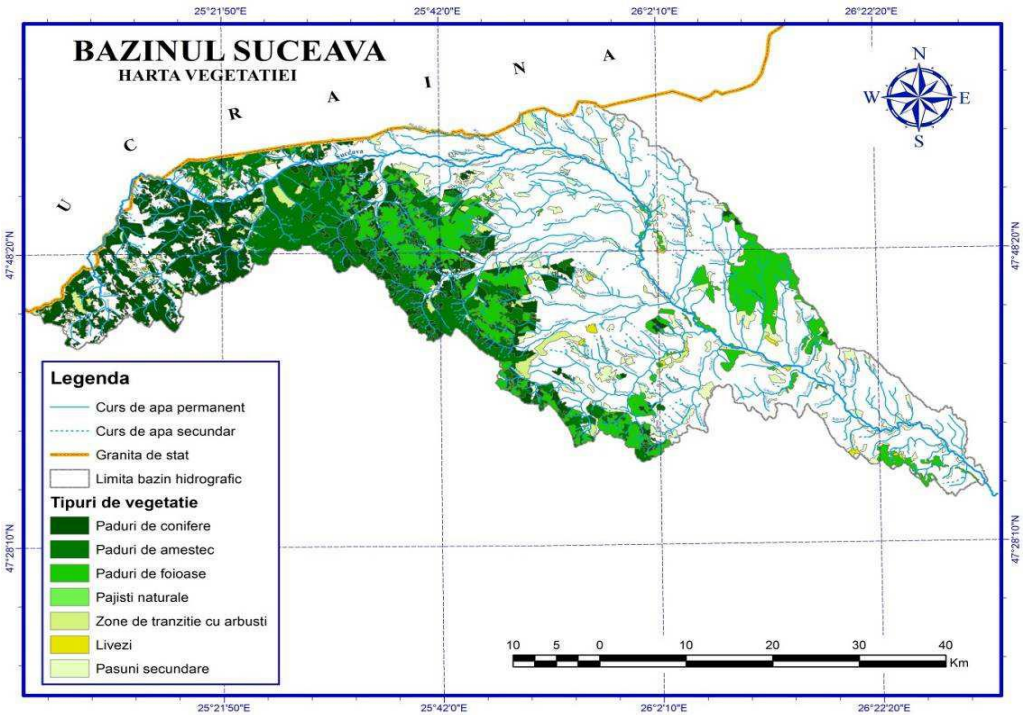

Figure 1. Map of vegetation floors in the Suceava River Basin

The territory studied falls within the area of silvostepe, with two subzones: the beech area and the sessile oak area.

The beech subarea (floor) occupies the eastern part of Obcinei Mari, the Piemontan Plateau and the Suceva Plateau. Beech is the dominant wood; in the western part, appear fir and spruce, which, in places, form pure arboreta. With sporadic distribution are recorded species of trees such as pine, rowan, birch, trembling poplar, sycamore, elm, ash, linden and shrub species (common hazel, red elder, blackberry). Towards contact with the Suceva Plateau, there are European hornbeam, maple, linden and, here and there, oak.

The sessile oak-oak subarea (floor) covers, in the plateau area of the Suceva River basin, almost all forms of relief, up to about 400 m altitude. Oak is also found in association

with other deciduous trees (European hornbeam, linden, sessile oak, ash, maple, field maple, etc.).

In recent years, soft woods have been replaced by acacia and, on the slopes of the area, only spruce is planted. All these wood species constitute a rich forest fund, occupying an area of 1,088.44 ha.

Both forests and herbaceous vegetation contribute, to a large extent, to creating a cooler climate throughout the area. At the same time, they milden the dry climate of the silvostepa, while favouring optimal conditions for the development of the other woody species in the neighbourhoods.

Vegetation has a very important effect in curbing land degradation processes. Trees, through their roots, secure the soil and prevent landslides, collapses, and the installation of torrential bodies. Through their canopy, these trees reduce the striking force of raindrops and the values of the spill on the slope. In this respect, afforestation actions are undertaken on the land affected by the current land-shaping processes. In the Suceva Plateau, on very high slope surfaces, for stabilizing slope processes, acacia is planted. Grass vegetation protects the soil very well against areolar erosion, against deflation.

Vegetation acts as a protective screen on the soil limiting the amount of water drained on the slopes, reducing the striking force of raindrops, and reducing areolar and linear erosion. Human intervention by deforestation and improper cultivation technologies favours accelerated erosion.

The azonal vegetation in the meadow of the Suceava River and the main tributaries consists of arboreta and meadows. The trees are found in the riverside coppices of alder, willow, poplar or even mixtures. In wide fields and in less wet sectors, there are clusters of sycamore, elm, ash, oak, linden, and European hornbeam.

The most widespread intrazonal vegetation is mountain vegetation found in the valleys, but especially on the course of the streams.

Riverside coppices are also found in the meadow of the Suceava River. In the forests of the grassland there are species of silver poplar (*Populus alba*), white willow (*Salix alba*), common alder (*Alnus glutinosa*), common oak (*Quercus robur*), linden (*Tilia cordata*), sycamore (*Acer pseudoplatanus*).

In the area of meadows and riverside coppices close to it is found the guelder-rose, as well as voluble or hanging species, such as hops or European hornbeam.

In wetter areas, such as puddles or peats, hydrophilous vegetation appears, consisting of sedge (*Carex vulpina*), compact rush (*Juncus conglomerateus*), field horsetail (*Equisetum arvense*), etc.

In the forest area, soils are highly acid, there are fewer nutrients, poorly humified, and forming dark raw humus which causes reduced biological activity. Vegetable residues are very importantȘ in deciduous forests, two or three times more nutrients are obtained compared to evergreen forests.

In the process of soil genesis, the soil is influenced by vegetation and the activity of the fauna inside the soil. The pedogenetic role is played by soil fauna as well as by micro-organisms (Lumbricidae, rodents, worms), through the process of ventilation, watering within the horizons and throughout the surface of the soil profile due to its mixture.

In the evolution and in the formation of the soil, water is important quantitatively and qualitatively and, if normal limits are exceeded, moisture deficit occurs.

Aluviosols occupy most of the river fields. They have a moderate humus content, a subne-utral to weak alkaline reaction, and favourable physical-biological properties. They are in various stages of evolution from poorly set alluvial soils to acidic brown soils.

CONCLUSIONS

Geomorphologically, the studied territory is part of the Moldova Plateau, Sucevei River Valley - Suceava River Gorges and Suceava Plateau. In this area, hilly fregments and terraces and slopes also appear.

From a climate perspective, the studied area has a temperate-continental climate with influences from the East and Baltic from the Northș it lies towards the central European province in the far north-east.

Forests, which occupy the highest areas of the territory, consist of a mixture of hard and soft woods such as beech, European hornbeam, oak, ash, poplar, maple, linden, cherry, and sycamore. Here and there are also found other wood species such as elm and willow. In recent years, soft woods have been replaced by acacia, and on the slopes of the area only spruce is planted. All these wood species constitute a rich forest fund, occupying an area of 1,088.44 ha. The area also features meadow forests known as smaller-area riverside coppices in the Suceava River meadow.

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