THE COROLOGY, ECOLOGY AND PHYTOSOCIOLOGY OF THE 9110 FOREST HABITAT FROM THE DANUBE VALLEY, BETWEEN CIUPERCENI AND GHIDICI SETTLEMENTS, DOLJ COUNTY

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Abstract

The thematic area provided in this paper is situated in the Danube Valley, between the settlements Ciuperenci and Gidici, Dolj County. This area is studied in the Bailesti plain, on the fifth terrace of Danube, part of the Oltenia Plain. Throughout the protected area is under the continental climate with Mediterranean influences. Since geologically in this area recent alluvial deposits represented by carbonate sands and sandy deposits of wind origin. In this territory the biodiversity is very rich, the studied area including the protected area of community importance - ROSCI 0039 Ciuperenci-Desa. The most important habitat forest is 9110 - Euro-Siberian steppic woods with Quercus spp. This habitat is edified by Quercetum roboris balsicum Paun (1964) 1966 (Syn. Festuca ripicola=Quercetum roboris Soò (1934) 1937) plant community that we found in the Arceru (Oveaselor) and Buricliu forest. The forests from this area benefit from the contribution of groundwater, compensate for the lack of water from rainfall and low levels of nutrients in the soil.

Considering the place where the study had been located to, the eco-pedo-climatic conditions and the anthropic term exerted we have considered that is necessary to develop some ecological studies (and using statistical methods (UPGMA and WPGMA, STYN-TAX 2000) for the plants communities of the forest habitat from this area.

Key words: forest habitat, plant communities, Danube Valley.

INTRODUCTION

The territory under research is located along of the Danube Valley, part of the Southern of Oltenia, tanging between Ciuperenci and Ghidici settlements.

The natural habitats of this region in Romania are very rich and interesting. The relief, climate and soil types determine a raised diversity of the vegetal species, plant communities, habitats, and landscapes in this area.

The studied area contains a significant number of rare or vulnerable species, included in the European or National Red Lists. The present paper aims presenting one forest habitat 9110 - Euro-Siberian steppic woods with Quercus spp., met in the Arceru (Oveaselor) and Buricliu forest from Dabube Valley.

The forests from this area benefits from the contribution of groundwater, compensate for the lack of water from rainfall and low levels of nutrients in the soil. The vegetal carpet of this forest habitat contains many species characteristic of the Danube Valley.

MATERIALS AND METHODS

The analysis of the plant community was done using the method of the Central - European phytocoenological school. For the plant community we have calculated the Bray-Curtis indices using the medium species abundance-dominance value (Podani, 2001). In order to identify the species and the inter-taxis, we looked into: Romanian Flora, vol. I-XII (1952-1976); Flora Europaea, vol. I-V (1964-1980).

The basic coenotaxonomic unit which was used to study the vegetation was the vegetal association. The associations were identified and distinguished according to the characteristic, edifying, dominant and differential species and for the classification of this plant community, we have used synthesis papers elaborated by: G. Coldea (1986, 1991) and L. Mucina et al. (2016).

As for the identified of the habitat we have used synthesis papers on the Romanian Manual for interpretation of EU habitats and Council Directive 92/43/EEC of 21 May 1992 on the

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RESULTS AND DISCUSSIONS

According to the research carried out between 2016-2017, in the Danube Valley, between the settlements Ciuperceni and Gidici, Dolj County, there were identified one plant community: Quercetum roboris balsicum Paun (1964) 1966 (Syn. Festuca rupicola Quercetum roboris Soó (1934) 1937).

This plant community edifies the forest habitat 9110 - Euro-Siberian steppic woods with Quercus spp.

Corology: The phytocoenoses of the plant community of this forest habitat are situated in the Arceru (Oveaselor) and Buricliu forests developed on alluvial soil.

Physiognomy and floristic composition. In the phytocoenotic composition of this plant community, apart from species Quercus robur, there are also constant many species that belong to the coenotaxa: QUERCETEA PUBESCENTI-PETRAEAE (Oberd. 1948) Jakucs 1960, ACERI TATARICI-QUERCION Zölyomi et Jakucs 1957. In the phytocoenotic composition of this plant community, beside the dominant species Quercus robur, there are also: Vincetoxicum hirundinaria, Scilla bifolia, Viola odorata, Asparagus tenuifolius, Astaragalus glycyphyllos, Viola suavis, Anthriscus cerefolium, Ornithogalum pyrenaicum, Carex micheli, C. tomentosa, Viola alba, Festuca rupicola, Urtica dioica, Helleborus odorus, Anemone nemorosa, Rumunculus ficaria, Verbascum phoeniceum, Carex remota, Silene alba, Geranium phaeum, Phytolaca americana, Lathyrus vernus, L. nissolia, Glechoma hirsuta.

The coverage of trees is poor 50-65%. The herbaceous and bush cover layer are developed. Threats to these phytocoenosis are the alien invasive plants: Ailanthus altissima and Phytolaca americana developed excessive (Figure 1).

They were also examined according to their floristic composition and physiognomy, syndynamics and economics. We paid much attention to the determination of the Bray-Curtis quantitative index (Figure 2), Kulczynski symmetric index (Figure 3), Sørensen qualitative index (Figure 4), using the Group-Average method (UPGMA), and Jaccard index (Figure 5), using the WPGMA method and the achievement of dendrograms, using the program SYN-TAX 2000 (for the associations with minimum 10 relevées).
The dendrogram made using the Group-Average method (UPGMA) and the Kulczynski symmetric index, highlights the separation of two distinct clusters, which, as it can be observed quantitative index values are very close. In the first cluster we can notice the separation of the survey 5 based on the present of the species Viola alba, absent in all the other surveys (Figure 3).

After an analysis of the dendrogram (Figure 4) of this plant community, used WPGMA method and Sørensen qualitative index, there can be noticed the separation of the 4th, 7th, 13th and 14th surveys, from the rest of the surveys, which are grouped in a cluster, based on the presence of the species Crataegus monogyna in larger numbers of individuals, compared to other surveys.

WPGMA method and Jaccard index, there can be noticed the grouped of the 2th, 3th, 4th, 5th, 6th, 8th, 9th, 12th, 13th and 14th surveyings, from the rest of the surveys, based on the similarity of the phytocoenosis (Figure 5).

CONCLUSIONS

The forests grow on large areas in Oltenia. They have a great importance in terms of biodiversity, but they also have a eco-pedo-genetic and economics role. In the researched area, the most important forest plant community is Quercetum roboris balsicum Paun (1964) 1966 (Syn. Festuca ripicolae-Quercetum roboris Soó (1934) 1937).

Threats to these phytocoenosis are the alien invasive plants: Ailanthus altissima and Phytolaca americana developed excessive. The phytodiversity of this plant community and forest habitat from Southern of Oltenia is endangered because the human impact is very high, although this area it is included in the important protected area from Romania. Nowadays, great efforts are made to restore representative Quercus robur plant community and keep them in a favorable preservation state.

REFERENCES


