

## RESEARCH OF THE NATURA 2000 HABITATS FOUND IN THE BULETA FOREST OF THE GOVORA RIVER BASIN

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**Keywords:** *Cerambycidae*, *Lucanidae*, Govora river, forest habitats

### ABSTRACT

*The territory that we have been studying is situated in the in the Buleta forest, part of the Govora river basin, Vâlcea County. The investigated area is characterized by highly complex eco-pedo-climatic, geographic, flora and fauna.*

*The plant communities, which establish the habitats, will be described based on their own observations considering several syntheses. Regarding the classification of vegetal associations it will be used the synthetic work written by J. S. Rodwell et al (2002). To identify the habitat will be used: Romanian Manual for interpretation of Eu habitats and Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.*

*From the area of the Buleta forest were identified the following types of habitats: **91E0\*** Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) - CLAS. PAL.: 44.3, 44.2 and 44.13, RO habitat type code: R4401, R4402, R4405, R4407, R4408; **91M0** - Pannonian-Balkan turkey oak sessile oak forests - CLAS. PAL.: 41.76, RO habitat type code: R4132, R4133, R4134, R4136, R4137, R4140, R4142, R4149, R4150, R4151, R4152, R4153, R4154, R4155; **9130** - Asperulo-Fagetum beech forests; CLAS. PAL.: 41.13; RO habitat type code: R4118, R4119, R4120; **6430** - Hydrophilous tall-herb fringe communities of plains and of the montane to alpine levels - CLAS. PAL.: 37. and 37.8, RO habitat type code: R3701, 3702, 3703, 3706, 3707, 3708, R3714 and **6240\*** Sub-pannonic steppic grasslands, CLAS. PAL.: 34.315.*

### MATERIAL AND METHODS

Based on the results obtained in field vegetation research, the cormophite flora is found, on the basis of which the description of cenotaxons was described. The plant communities have been identified and delineated according to the characteristic, edifying, dominant and differential species indicated in the phytosociological literature.

The cenotaxonomic classification of vascular plant species and the classification of plant communities in a cenosystem was carried out mainly after: gh. Coldea et al., 1997; j.m. géhu, 1992, v. Sanda, a. Popescu et al., 1980, 1983, 1988, 1999, e. Oberdorfer, 1992; I. Mucina, g. Grabherr & t. Ellmauer, 1993; j. S. Rodwell, j. H. J. Schaminée, I. Mucina, s. Pignatti, j. Dring, d. Moss, 2002; I. Mucina, 1997; f. Täuber, 1991-1992 etc.

For habitat identification were used mainly: manual of interpretation of nature 2000 habitates in romania (dan gafta, owen mountford - coord., 2008) and habitaties in romania (donita n. Et al 2005). The European Union Habitat Interpretation Manual (EUR 27) was also used.

### INTRODUCTION

This forest is located in the lower basin of Govora River, in the hilly floor, in the Govora production unit, Govora District, Canton of Mihaești, within the Silvic Detour Băbeni, in the area of Mihaești village. Spreads over an area of 109.6 ha.

The plant communities of this forest develop on the following soil types: luvisol and eutricambosol.

The Buleta Forest occupies the Garnita Hill which is part of the great Govora Hills unit, the geomorphological unit being represented by slopes with low tilt to the sea, predominant in the moderate-tilt ediverse slopes. The slopes generally have a wavy configuration with inclinations ranging from 16%-40%. This forest is crossed by several streams: Bocsii, Buleta, Tingririlor, Apa de sub Rapi Valley, important tributaries of the Govora River.

The types of forest found in the Buleta Forest are: *Quercus petraea* forests with medium productivity with mull flora and *Fagus sylvatica* forests from the hill area on skeletal soils with mull flora. The age of the trees in this forest is between 30-150 years old (fig. 1).



Fig. 1. Aspect of the Buleta Forest (Foto L.Niculescu, 2017)

## RESULTS AND DISCUSSIONS

From the investigated area were identified the following types of forest habitats:

- **91E0\***- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) - CLAS. PAL.: 44.3, 44.2 și 44.13; RO habitat type code: R4401, R4402, R4405, R4407, R4408;
- **9130** - *Asperulo-Fagetum* beech forests; CLAS. PAL.: 41.13; RO habitat type code: R4118, R4119, R4120;
- **91M0** - *Pannonian-Balkan* turkey oak sessile oak forests; CLAS. PAL.: 41.76; RO habitat type code: R4132, R4133, R4134, R4136, R4137, R4140, R4142, R4149, R4150, R4151, R4152, R4153, R4154, R4155;
- **6430** - *Hydrophilous tall-herb fringe communities of plains and of the montane to alpine levels* - CLAS. PAL.: 37. and 37.8, RO habitat type code: R3701, 3702, 3703, 3706, 3707, 3708, R3714;
- **6240\*** *Sub-pannonic steppic grasslands*, CLAS. PAL.: 34.315.

The 91E0\* habitat - Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* has been identified in the Buleta Valley and the Apa de sub Rapi Valley, on very small areas.

From a phytosociological point of view, the following plant associations have been identified and described: *Salicetum albae-fragilis* Issler 1926 em. Soó 1957 and *Stellario nemori-Alnetum glutinosae* (Kästner 1938), but on very small areas.

Species with a high constancy in the structure of phytocoenosis that build plant communities within the habitat are: *Alnus glutinosa*, *Salix alba*, *S. fragilis*, *Crataegus monogyna*, *Sambucus nigra*, *Aegopodium podagraria*, *Stellaria nemorum*, *Cardamine amara*, *C. pratensis*, *Carex brizodes*, *C. pendula*, *C. remota*, *C. sylvatica*, *Cirsium oleraceum*, *Equisetum telmateia*, *Geranium sylvaticum*, *Lycopus europaeus*, *Lysimachia numularium*, *Rumex sanguineus*, *Urtica dioica*, *Polygonum hydropiper*, *Petasites albus*, *Ranunculus ficaria*, *Stellaria nemorum*.

The 9130 habitat - *Asperulo-Fagetum* beech forests has been identified in the Buleta Valley, Bocsii Valley and Baci Valley. More than 60 phytosociological surveys have been made. Forest plant communities that build this type of habitat shall be installed on slopes with a slope of between 5-30 %. The identified carpino-facetes mainly inhabit the northern slopes of the hills, but do not extend to the base of the valleys, where the humidity is higher. Vegetates on brown forest soils, medium deep, usually weak-acid.

In the thematic area, the corresponding habitats according to the classification in Romania are built by the plant community *Carpino-Fagetum* Paucă 1941. The phytocoenoses that build this type of habitat are characterized by a rather rich floristic composition.

In the floristic composition of phytocoenosis the following grass species are found with a high constancy: *Dentaria bulbifera*, *Galium schultesii*, *Galium odoratum*, *Lathyrus venetus*, *Carex sylvatica*, *Corydalis cava*, *Brachypodium sylvaticum*, *Mercurialis perennis*, *Asarum europaeum*, *Lamium galeobdolon*, *Melica uniflora*, *Aposeris foetida*, *Glechoma hederacea*, *Allium ursinum*, *Alliaria petiolata*.

The 91M0 habitat - *Pannonian-Balkan turkey oak sessile oak forests* is very widespread in the researched territory, it meets on the Garnița Hill and Apa de sub Rapi Valley.

From a phytosociological point of view the habit is edified by *Quercus petraea*, dominant, sometimes can appear and *Fagus sylvatica*, *Quercus frainetto* and *Carpinus betulus*.

The floristic composition of phytocoenoses is quite rich, encompassing numerous species characteristic of the forests of *Quercus petraea* in Romania.

The species in the structure of phytocoenoses with a high constancy are: *Quercus petraea*, *Q. frainetto*, *Fagus sylvatica*, *Carpinus betulus*, *Tilia tomentosa*, *T. platyphyllos*, *Cerasus avium*, *Acer platanoides*, *A. tataricum*, *A. campestre*, *Pyrus pyraeaster*, *Malus sylvestris*, *Cornus mas*, *Cotinus coggygria*, *Prunus spinosa*, *Crataegus monogyna*, *Cornus sanguinea*, *Rosa canina*, *Euonymus verrucosus*, *Ligustrum vulgare*, *Cytisus nigricans*, *Glechoma hederacea*, *Festuca hetreophylla*, *Lythospermum purpuraeruleum*, *Tamus communis*, *Carex pillosa*, *Anthriscus cerefolium*, *Corydalis bulbosa*, *Aremonia agrimoniodes*, *Betonica officinalis*, *Campanula rapunculoides*.

Among the limiting factors acting at the level of these arboretums, phytopathogenic agents and entomophagi can be mentioned.

In some areas the carpen has developed in the detrimental species of *Quercus* forming a hard-to-cross shoot. Most species in the florist composition are common, but there are also species found in the Romanian Red Lists and which exhibit different degrees of danger: *Cephalanthera longifolia*, *Platanthera chlorantha* and *Neottia nidus-avis*.

The 6430 habitat - Hydrophilous tall-herb fringe communities of plains and of the montane to alpine levels is found in fragmentary along the wet valleys between the slopes of the hills, where it occupies small areas, forming extended or restricted strips depending on the moisture level in the soil.

The phytocoenoses within plant communities that build habitat may be temporary depending on the level of moisture in the soil. The habitat-edifying plant community is *Scirpetum sylvatici* Ralski 1931 emend. Schwich 1944. The phytocoenoses of *Scirpus*

*sylvaticus* develop on alluvial, pseudogleic and gleic soils. The characteristic species *Scirpus sylvaticus* clearly dominates phytocenoses, reaching a coverage of 95 to 100 %. Excess moisture favours both species characteristic of the *Calthion alliance* (*Trifolium hybridum*, *Ranunculus repens*, *Equisetum palustre*, *Lysimachia nummularia* etc.) as well as those of the *Filipendulion alliance* (*Lysimachia vulgaris*, *Lythrum salicaria* etc.), *Phragmiti* – Magnocariceta class (*Carex vulpina*, *Glyceria notata* etc.). The phytocenoses of *Scirpus sylvaticus* have been identified in the Buleta Valley, forming strips stretched along the length of the valley. Most species in the floristic cortege are common, but there are also species of economic, eco-pedological importance.

These high herb phytocenoses play an important role in the process of soil formation in the valleys.

The 6240\* habitat - Sub-pannonic steppic grasslands - is spread on restarnse surfaces at the edge of the forest or in its clearings.

In the area near Padrure Buleta this type of habitat is built by the plant community *Bothriochloëtum* (*Dichantietum*) *ischaemi*.

The vegetation cover is 100%, in the composition of the vegetable carpet participating with a high consistency the following species: *Dichanthium ischaemum*, *Fragaria viridis*, *Galium verum*, *Cynosurus cristatus*, *Anthoxanthum odoratum*, *Poa pratensis*, *Trifolium pratense*, *Agrostis capillaries*, *Taraxacum officinale*, *Teucrium chamaedrys*, *Eryngium campestre*, *Salvia nemorosa*, *Carthamus lanatus*, *Dianthus armeria*, *Sanguisorba minor*, *Festuca rupiacola*, *Medicago lupulina*. Due to the seasonal variation in the edafic humidity of populated resorts, mesophilic species may frequently appear in the floristic structure.

## CONCLUSIONS

Following research in the Sanatoriu Forest of the Govora river basin, we have identified five important Natura 2000 habitat.

For all identified forest habitats it is recommended to limit cuts to conservation ones that promote the regeneration of *Quercus petraea* and *Fagus sylvatica*, to ban grazing and the collection of grass plants of economic value. Among the limiting factors acting at the level of this grassy habitats we can mention grazing, solid debrees and waste, invasive species.

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