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THE PEATLAND AND MARSH HABITATS FROM THE GEOPARK PLATEAU MEHEDINŢI, ROMANIA

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ABSTRACT

This paper presents the five wetlands located at different altitudes, *in several places from the Geopark Plateau Mehedinți*. *A few of them have the typical structure of bog and preserve rare plant species of national and EU significance*.

The present paper proposes the phytosociological framing of the vegetation of these marshes and the attribution of the occupied surfaces to habitats of community importance.

The article presents the floristic list of wetlands and brings the necessary arguments for the protection of these wetlands and management proposals.

INTRODUCTION

The Geopark Plateau Mehedinți, with an area of 106 000 ha, was stated as a protected area of international interest by HG no. 2151/30.11.2004. It includes the ROSCI0198 Geopark Plateau Mehedinți, which represents 50% of the total area.

Research history. The swamp from Poiana Mare, at north of the Obârşia Cloşani. It is only one about whom we have a vague referenced, namely, professor Emilian Ţopa, who visited the area between 1945-1946, has collected briologic material from several points of the current Geopark (among them the two species of *Sphagnum*), who were handed of professor Traian Ştefureac from the Faculty of Biology, Bucharest. This determined and published in a paper, under the title: „Poiana Mare, Obârşia Cloşani, peatland in miniature" (Ştefureac 1948) the two species of *Sphagnum*: *S. cuspidatum* and *S. palustre*. Ciortan (Simion) and Negrean in 2013 described, from a floristic point of view, the other four wetlands in the Geopark Plateau Mehedinți, as well as the one in Poiana Mare.

MATERIAL AND METHODS

We carried out the research on the inventory of natural habitats in the period 2010-2024. We identified plant species using the specialized guidebooks in the country (Ciocârlan 2009, Săvulescu 1952-1976, Sârbu et al. 2013). The plant nomenclature follows Euro+Med (2006-). National Red Lists used: Dihoru & Dihoru 1994, Oltean et al. 1994. I studied vegetation using the of Central-European geobotanical school of surveying the vegetation [Braun-Blanquet Central European School/School Zürich-Montpellier (Braun-Blanquet 1964)]. The phytocoenological framing of the vegetation mainly according to Chifu (ed.) et al. 2014, and secondarily

by various authors: Sanda et al. 1997, 2008. Analyzing the flora of each wetland, we classified the vegetation in the Romanian habitat type (Doniță et al. 2005, 2006); then we assigned these habitats to a Natura 20000 habitat (Gafta & Mountford 2008).

The studied area

1. The Poiana Mare wetland (to the north of Obârșia Cloșani) - the approx. coordinates: 45.049908°-22.665154°/45.048336°-22.663058°. The proposed perimeter is located on the border with the Domogled-Valea Cernei Natural Park, at the intersection of the forest roads that go to Poiana Mică and Drăghiceanu forest, respectively, to Gorganului Valley and Motru Sec and to Furca Caprei Hill.

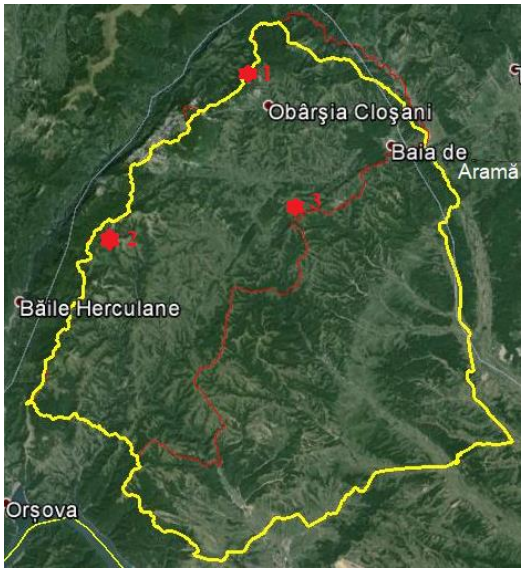

Figure 1. Location of wetlands (1, 2, 3) at the Geopark Plateau Mehedinți (yellow line) and ROSCI0198 (red line)

2. The wetlands „La Funduri". From the center of the village of Gornenti, go up the main road, then, at the fountain, follow the road on the right and after approx. 600 m we leave the village. The forest road then climbs to the north, then to the west, bypassing the ogash on the left. After passing the sheepfold in the area, the road reaches the south-west foothills of Ciolanu Mare Mount, runs a section near the summit, crosses a wooded area and meets a road fork. The road on the right goes up to a slate quarry. The one on the left crosses the stony slope to the headwaters of Ogaşului Rău, above the „La Funduri" area where the water catchment of the villages of Gornenți and Malarişca is located. In this area, we have identified four wetlands:

a) At the crossroad mentioned above, approx. coordinates: 44.928512°/22.515190° and approx. 985 m alt.

b) „Lacul Roșu" („Red Lake") - wetland, with water from precipitation, located below the level of the surrounding beech forest. It has an emissary, probably artificial, to drain excess water. Coordinates: 44.926966°/22.512668°, approx. 850 m alt.

c) A small marsh whose source is rainwater. Coordinates: 44.925682°/22.511787°.

d) Lacul lui Iova (Iova Lake) - coordinates 44.924150°/22.512563°, approx. 820 m alt. Peatland with the richest flora in the „La Funduri" area. It is located in a „gutter", surrounded by ribs all around and does not seem to be fed by surface water. A marsh receives water from rainfall and torrents from the surrounding coasts (which are very rich in nutrients). This explains its eutrophication.

3. The Busești peatland (The bottomless lake). It is located in the middle of Busești village at approx. 547 m alt. and coordinates 44.947947°/22.719087°.

RESULTS AND DISCUSSIONS

1. The Poiana Mare wetland. It is an area occupied by a marsh located on three levels - peatland with *Eriophorum angustifolium*, *E. vaginatum*, *Sphagnum* sp. and *Molinia caerulea*. The highest area (northeast) of the marsh has a domed center, and water persists even in summer. The marsh receives water only from rainfall. A trickle of water flows from it, on the layer of peat, which connects it with the following swamps invaded by *Juniperus communis*. It should be noted here the presence of the species *Molinia caerulea*, which achieves a coverage of approx. 80%, and the moss layer is present through numerous specimens of *Polytrichum commune*.

In the upper step of the wetland, we identified the following species: *Agrostis stolonifera* subsp. *stolonifera*, *Avenella flexuasa* subsp. *flexuosa*, *Betula pendula*, *Calamagrostis villosa*, *Carex bigelowii* subsp. *dacica*, *C. brizoides*, *C. echinata, C. lasiocarpa*, *C. leporina, C. remota*, *Epilobium palustre*, *Eriophorum vaginatum*, *Galium album* subsp. *album*, *Glyceria fluitans*, *G. nemoralis*, *Molinia caerulea*, *Phragmites australis* subsp. *australis*, *Polytrichum commune*, *Potentilla erecta*, *Pteridium aquilinum*, *Sphagnum cuspidatum*, *S. palustre*, *Stellaria graminea*, *Thymus pulegioides* subsp. *pulegioides*, *Vaccinium myrtillus*, *V. uliginosum*, *V. vitis-idaea*. Extensive grazing in the area has led to the intrusion of species such as *Agrostis capillaris* subsp. *capillaris*, *Festuca rubra* subsp. *rubra*, and little clumps of *Nardus stricta*. In this upper step of the wetland, we identified the ass. Junco-Molinietum Preising 1951.

The central area of the wetland is slightly convex. The peat layer is about 2 m (Ciortan & Negrean 2013). The list of species includes: *Betula pendula*, *Caltha palustris*, *C. bigelowii* subsp. *dacica*, *C. canescens*, *C. elongata*, *C. leporina*, *Danthonia decumbens*, *Epilobium palustre*, *Eriophorum angustifolium*, *E. vaginatum* (predominant), *Galium palustre*, *Gentiana asclepiadea*, *Juncus articulatus* subsp. *articulatus*, *J. bufonius*, *J. conglomeratus*, *Juniperus communis* subsp. *communis*, *Lycopodium clavatum*, *Lysimachia vulgaris*, *Luzula luzuloides* subsp. *rubella*, *Molinia caerulea*, *Phragmites australis* subsp. *australis*, *Polytrichum commune*, *Potentilla erecta*, *Pteridium aquilinum*, *Rubus hirtus*, *R. idaeus*, *Sphagnum cuspidatum*, *S. palustre*, *Vaccinium myrtillus*, *V. uliginosus*, *V. vitis-idaea*, *Veronica anagallis-aquatica*, *Viola canina* subsp. *canina*. In this central area, phytocenoses of the ass. Junco-Caricetum fuscae R. Tüxen (1937) 1952 (Syn. Junco-Caricetum nigrae R. Tüxen (1937) 1952 in Sanda et al. 2008) were identified; they build habitat R5411 Southeast Carpathian swamps, eu-mesotrophic with *Carex nigra* subsp. *nigra*, *Juncus glaucus* and *Juncus effusus*.

In southwestern area of the wetland is the one located at the foot of the beech forest, as soon as you exit the forest road into the meadow. On its western outskirts are several small lakes, probably artificially deepened, all with water, especially in spring, which later evaporates. There the peat layer is more than 1 m thick (Ciortan & Negrean 2013). The species *Juniperus communis* has invaded the lower level of the marsh. Important species identified here: *Carex bigelowii* subsp. *dacica*, *C. canescens*, *C. echinata, C. leporina*, *Eleocharis carniolica*, *Eriophorum angustifolium*, *E. vaginatum*, *Juncus articulatus* subsp. *articulatus*, *J. bufonius*, *Lythrum portula*, *Molinia caerulea*, *Nardus stricta*, *Polytrichum commune*, *Sphagnum cuspidatum*, *S. palustre*, *Thelypteris palustris*, *Vaccinium myrtillus*, *V. uliginosus*, *V. vitis-idaea*. In addition to these, there are also: *Anthoxanthum odoratum*, *Carex brizoides*, *C. sylvatica*, *Juncus compressus*, *Juniperus communis* subsp. *communis*, *Luzula campestris*, *L. multiflora* subsp. *multiflora*, *Lythrum portula*, *Polygala comosa*,

Potentilla erecta, *P. reptans*, *Mentha pulegium*, *Molinia caerulea*, *Urtica dioica*, *Veronica chamaedrys* subsp. *chamaedrys*, *V. officinalis*. At the western edge, toward the forest: *Agrostis capillaris* subsp. *capillaris*, *Hypericum humifusum*, *Juncus bufonius*, *Linum catharticum* subsp. *catharticum*, *Pteridium aquilinum*. In this southwestern area, we identified well-cohesed phytocenoses of Eleochari carniolicae-Caricetum stellulatae Gh. Popescu 1981 - the association was reported by I. Şerbănescu in 1957 from western Oltenia, being characteristic of the upland places in the podzolic area (Sanda et al. 1997) and Popescu (1974, 1981) from Romanii de Sus, Vâlcea County (Sanda et al. 1997, Chifu et al. 2014). Among the more frequent accompanying species, in the analyzed area they we identified *Hypericum humifusum*, *Juncus conglomeratus* and *Carex echinata*.

We did not identify phytocenoses of some associations for the 7110* habitat but I identified species of Erico-Sphagnetalia magellanici (*Eriophorum vaginatum*, *Sphagnum cuspidatum, S. palustre, Vaccinium uliginosus*, *V. vitis-idaea*) and *Caricetalia fuscae* (*C*arex *bigelowii* subsp. *dacica*). We mention that we did not identify the *Sphagnum recurvum* species in the analyzed area.

In the lower stages of the wetland, invaded by *Juniperus*, the specific richness is low.

We classify these areas (Poiana Mare wetland) as habitat 7120 Degraded raised bogs still capable of natural regeneration because the relative abundance of species is high.

The habitat 6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) represented here by the habitat R3710 Dacian meadows of *Molinia caerulea* (ass. Junco-Molinietum Preising 1951) placed in the upper part of the wetland and R5411 Southeast Carpathian swamps, eu-mesotrophic with *Carex nigra* subsp. *nigra*, *Juncus glaucus* and *Juncus effusus* confirms the placement at 7120.

The importance of the Poiana Mare wetland resides in the fact that preserves:

- Natura 2000 habitat: 7120 Degraded raised bogs still capable of natural regeneration; 6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae).

- R5411 Southeast Carpathian swamps, eu-mesotrophic with *Carex nigra* subsp. *nigra*, *Juncus glaucus* and *Juncus effusus* - the oligo-mesotrophic habitat presents in small clumps or on larger areas in the swamps and marshes of the entire Carpathian chain.

- Phytocenoses of some rare associations in Romania: Eleochari carniolicae-Caricetum stellulatae Gh. Popescu 1981.

- Species of community interest whose conservation requires the designation of special conservation areas: *Eleocharis carniolica*, *Lycopodium clavatum*.

- Species of plants of community interest who is sampling from nature and exploitation are likely to be subject to management measures *Sphagnum cuspidatum*, *S. palustre*.

- Significant populations of rare species at the level of the Geopark: *Carex bigelowii* subsp. *dacica*, *C. brizoides*, *C. echinata*, *C. elongata*, *Eriophorum angustifolium, E. vaginatum*, *Hypericum humifusum*, *Lythrum portula*, *Molinia caerulea*, *Sphagnum cuspidatum*, *S. palustre*, *Vaccinium myrtillus*, *V. uliginosus*, *V. vitis-idaea*.

- Rare species from nationally level: *Eleocharis carniolica* (Dihoru & Dihoru 1994), *Rumex thyrsiflorus*, *Vaccinium uliginosum* (Oltean et al. 1994).

Pressures on the described habitats: lack of precipitation; invasion of the *Pteridium aquilinum* species; extensive grazing.

2. The wetlands „La Funduri"

a) The species list: *Antennaria dioica*, *Armeria alpina* subsp. *halleri*, *Bellis perennis*, *Caltha palustris*, *Crepis paludosa*, *Eriophorum angustifolium*, *Luzula sylvatica* subsp. *sylvatica*, *Ornithogalum* sp., *Pteridium aquilinum*, *Taraxacum erythrospermum*, *T. janchenii*, *Trifolium repens*, *Viola canina* subsp. *canina*.

It should be noted here only the presence of *Eriophorum angustifolium* characteristic species of the class Scheuchzerio - caricetea nigrae (fuscae) (Nordh. 1937) Tx. 1937.

This swampy area receives water from a mountain spring but also from the torrents on Mount Ciolanu. The flows of serpentines from Mount Ciolanu (which extends in the northern part) strongly influence the floristic composition of this marsh.

The importance of the wetland resides in the fact that preserves:

- Rare species from nationally level: *Armeria alpina* subsp. *halleri, Taraxacum jankenii* (Oltean et al. 1994).

- Significant populations of rare species at the level of the Geopark: *Eriophorum angustifolium.*

b) „Red Lake" - swamp, with water from precipitation, located below the level of the surrounding beech forest. It has an emissary, probably artificial, to drain excess water. There is a blanket of *Sphagnum* here, which is developing on the edge, and a large population of *Eleocharis carniolica*, which is gradually developing as the water in the marsh recedes.

The species list: *Alisma lanceolatum*, *A. plantago-aquatica*, *Carex leporina*, *C. sylvatica* subsp. *sylvatica*, *C. vesicaria*, *Eleocharis carniolica*, *Epilobium tetragonum* subsp. *lamyi, Glyceria fluitans*, *Iris pseudacorus*, *Juncus conglomeratus*, *Lysimachia vulgaris*, *Lythrum salicaria*, *Potamogeton nodosus*, *Pteridium aquilinum*, *Ranunculus acris* subsp. *acris*, *Scutellaria galericulata*, *Sphagnum palustre*.

Here the cenoses of the association stand out Potamogeton natantis Soó (1927) 1934, Caricetum vesicariae Chouard 1924 and Eleochari carniolicae-Caricetum stellulatae Gh. Popescu 1981.

Around the swamp, species like *Asperula cynanchica*, *Bellis perennis*, *Calamagrostis epigejos* subsp. *epigejos*, *Dactylorhiza sambucina, Dianthus giganteus* subsp. *banaticus*, *Homogyne alpina*, *Linum hologynum*, *Vaccinium myrtillus* (Ciortan & Negrean 2013).

The importance of the „Red Lake" swamp resides in the fact that preserves:

- Natura 2000 habitat: 3160 Natural dystrophic lakes and ponds [ass. Potametum natantis (1927) 1934].

- Phytocenoses of some rare associations in Romania: Eleochari carniolicae-Caricetum stellulatae Gh. Popescu 1981.

- Species of community interest whose conservation requires the designation of special conservation areas: *Eleocharis carniolica.*

- Species of plants of community interest who is sampling from nature and exploitation are likely to be subject to management measures *Sphagnum palustre*.

- Important species from the specific latitudine: *Carex vesicaria* and altitude: *Homogyne alpina*.

- Rare species of national interest: *Eleocharis carniolica* (Dihoru & Dihoru 1994).

- Several rare species of national interest we have identified in the vicinity: *Dactylorhiza sambucina*, *Dianthus giganteus* subsp. *banaticus* and *Linum hologynum* (Oltean et al. 1994).

The lake is important because it could prove the evolutionary process of swamps as proof of the stratum of *Sphagnum* at its edge and *Homogyne alpina* species - are relicts of a swamp at a higher altitude.

c) A small marsh whose source is rainwater.

The species list: *Briza media*, *Calamagrostis epigejos* subsp. *epigejos*, *Cynosurus cristatus*, *Dactylis glomerata* subsp. *glomerata*, *Dactylorhyza saccifera* subsp. *saccifera*, *Epipactis palustris*, *Eriophorum angustifolium*, *Filipendula ulmaria* subsp. *ulmaria*, *Galium rivale*, *Holcus lanatus* subsp. *lanatus*, *Hypericum perforatum* subsp. *perforatum*, *Lathyrus pratensis*, *Linum hologynum*, *Lysimachia vulgaris* subsp. *vulgaris*, *Lythrum salicaria*, *Mentha longifolia* subsp. *longifolia*, *Molinia caerulea*, *Platanthera chlorantha*, *Potentilla argentea*, *P. erecta*, *Prunella vulgaris* subsp. *vulgaris*, *Pteridium aquilinum*, *R. canina, Rosa subcollina*, *Rumex thyrsiflorus*, *Salix cinerea*, *Scirpus sylvaticus*, *Thelypteris palustris*,*Trifolium medium* subsp. *medium*.

In this area, the vegetation is of the type Thelipterido-Salicetum cinereae Šomšak 1963.

The importance of this wetland resides in the fact that preserves:

- Significant populations of rare species at the level of the Geopark: *Eriophorum angustifolium*, *Molinia caerulea*, *Salix cinerea*, and *Thelypteris palustris*.

- Important species from the specific latitudine: *Eriophorum angustifolium*, *Galium rivale*, *Potentilla erecta*.

- The area preserves nationally rare species: *Dactylorhiza saccifera* subsp. *saccifera, Epipactis palustris*, *Platanthera chlorantha*, *Linum hologynum*, *Rumex thyrsiflorus* (Oltean et al. 1994).

d. Lacul lui Iova (The Iova Lake)

The marsh has a convex surface on which species such as *Carex bigelowii* subsp. *dacica, Carex canescens*. *C. limosa*, *Comarum palustre*, *Eriophorum angustifolium*, *Menyanthes trifoliata*, *Sphagnum palustre* and *S. cuspidatum*. The *Sphagnum* blanket is mobile with sudden movements. The peat has a light brown color, and a depth of more than 2 m. The water pH = 7, 6 (Ciortan & Negrean 2013).

The species list: *Agrostis canina*, *A. capillaris*, *Alisma plantago-aquatica*, *Betula pendula*, *Calamagrostis canescens* subsp. *canescens*, *Calitriche* sp., *Carex acuta*, *C. bigelowii* subsp. *dacica*, *C. canescens*, *C. echinata, C. elata* subsp. *elata*, *C. hirta*, *C. leporina, C. limosa*, *C. pallescens*, *C. riparia*, *C. vesicaria*, *Comarum palustre*, *Eleocharis carniolica*, *E. palustris* subsp. *palustris*, *Epilobium collinum*, *E. palustre*, *Epipactis palustris*, *Eriophorum angustifolium*, *Filipendula ulmaria* subsp. *denudata*, *Galium verum* subsp. *verum*, *Glyceria fluitans*, *Juncus conglomeratus*, *J. inflexus*, *Hypericum perforatum* subsp. *perforatum*, *Lycopus europaeus*, *Lysimachia punctata*, *L. vulgaris* subsp. *vulgaris*, *Lythrum salicaria*, *Menyanthes trifoliata*, *Molinia caerulea*, *Parnassia palustris*, *Potentilla erecta*, *P. neglecta*, *Rosa canina*, *R. rubiginosa*, *Rumex conglomeratus*, *Salix cinerea*, *Scirpus sylvaticus*, *Scutellaria galericulata*, *Silene flos-cuculi*, *Sphagnum cuspidatum*, *S. palustre*, *Stellaria graminea*, *Thelypteris palustris*, *Vaccinium myrtillus*, *Veronica scutellata*.

The characteristic species that determine the eutrophic character of the marsh are *Betula pendula,* numerous species of *Carex*, *Comarum palustre, Equisetum palustre*, *Eriophorum angustifolium*, *Juncus conglomeratus, J. inflexus*, *Lythrum salicaria*, *Menyanthes trifoliata*, *Molinia coerulea*, *Parnassia palustris*, *Phragmites australis* and *Thelypteris palustris*.

The characteristic species for the class Scheuchzerio-Caricetea nigrae (fuscae) (Nordh. 1 937) Tx. 1937 are *Comarum palustre*, *Eriophorum angustifolium*, *Menyanthes trifoliata.*

There is an interesting zoning of the vegetation: from the center to the edge, several layers of vegetation can be observed: *Menyanthes trifoliata*, *Comarum palustre* and a few specimens of *Betula pendula,* then a belt of *Thelypteris palustris*, then *Pteridium aquilinum*, then *Rosa canina*, *Juniperus communis*, *Crataegus monogyna* which also climbs the nearby slope.

Around the lake - tussock forming from *Carex elata* subsp. *elata*.

Phytocenoses of the ass. Carici-Menyanthetum Soó 1955 - sass. menyanthetosum trifoliatae were identified in the central part demonstrates the oligotrophic nature of this area, with a moderately acidic soil reaction.

In the eastern part is a small lake with vegetation, which dries and, then gradually, is swarming with Eleochari carniolicae-Caricetum stellulatae Gh. Popescu 1981.

In the southern part of the marsh, phytocenoses of the ass. Junco-Caricetum fuscae R. Tüxen (1937) 1952 were identified.

In the southwestern part, phytocenoses of the ass. Lysimachio vulgaris-Filipenduletum Bal.-Tul. 1978 were identified.

In the central-western part there are a number of shrubs (*Salix cinerea*, *Rosa* sp.), a sign that the soil is quite close. Here, I identified a phytocenosis of the ass. Thelypteridi-Salicetum cinereae Somšac 1963.

The importance of the The Iova Lake marsh resides in the fact that preserves:

- Natura 2000 habitat: 6430 Hydrophilous tall-herb fringe communities of plains and of the montane to alpine levels (ass. Lysimachio vulgaris-Filipenduletum Bal.-Tul. 1978).

- R5411 Southeast Carpathian swamps, eu-mesotrophic with *Carex nigra* subsp. *nigra*, *Juncus glaucus* and *Juncus effusus* [ass. Junco-Caricetum fuscae R. Tüxen (1937) 1952].

- Phytocenoses of some rare associations in Romania: Carici-Menyanthetum Soó 1955 - sass. menyanthetosum trifoliatae and Eleochari carniolicae-Caricetum stellulatae Gh. Popescu 1981.

- Species of community interest whose conservation requires the designation of special conservation areas: *Eleocharis carniolica.*

- Species of plants of community interest who is sampling from nature and exploitation are likely to be subject to management measures *Sphagnum palustre.*

- Rare species at national level: *Eleocharis carniolica*, *Carex limosa*, *Comarum palustre*, *Epipactis palustris* (Oltean et al. 1994).

- Significant populations of rare species at the level of the Geopark: *Caltha palustris*, *Carex bigelowii* subsp. *dacica*, *C*. *echinata*, *C*. *elongata*, *C*. *lasiocarpa*, *C*. *limosa*, *C. vesicaria*, *Comarum palustre*, *Crepis paludosa*, *Epipactis palustris*, *Eriophorum angustifolium*, *E*. *vaginatum*, *Molinia caerulea*, *Parnassia palustris*,

Sphagnum cuspidatum, *S. palustre*, *Thelypteris palustris*, *Vaccinium myrtillus*, *V. vitis-idaea*.

- Important species from the specific latitudine: *Calamagrostis canescens*, *Carex acuta*, *C. bigelowii* subsp. *dacica*, *C. canescens*, *C. elata* subsp. *elata*, *C. limosa*, *Epilobium palustre*, *Eriophorum angustifolium*, *Filipendula ulmaria* subsp. *denudata*, *Menyanthes trifoliata* (rare species in plain and hilly regions), *Molinia caerulea*, *Potentilla erecta*, *Thelypteris palustris*.

Pressures on the described habitats: invasion of the *Pteridium aquilinum* species.

3. The Buseşti peatland (**The bottomless lake**). Has clearly the appearance of a typical bog. The floating swamp at Buseşti is slightly convex - about 2 m from the surrounding lagg, with water at a depth of 1.5 m and tussock forming from *Carex pseudocyperus*.

The marsh has an elongated shape in the north-south direction, seems to have a length of about 300 × 250 m. In the middle, slightly convex, there are three pine trees (*Pinus sylvestris*) and four birch trees (*Betula pendula*), the some already dried. The vegetation is composed of bryophytes species (*Polytrichum commune Sphagnum palustre*), *Carex rostrata* and *Menyanthes trifoliata*. We also noted here *Lycopodiella inundata* – several groups in the central part, with a much-unexpected presence in this region of the country. Alongside these: *Agrostis canina*, *A. capillaris, Carex echinata*, *C. limosa*, *Eriophorum angustifolium*, *Lycopus europaeus*, *Lysimachia vulgaris* subsp. *vulgaris*, *Menyanthes trifoliata*, *Frangula alnus* subsp. *alnus*, *Pinus sylvestris*, *Polytrichum commune*, *Potentilla erecta*, *Scutellaria galericulata*, *Sphagnum cuspidatum*, *S. palustre*.

The phytocoenoses of the ass. Caricetum limosae Br.-Bl. 1921 - sass. menyanthetosum trifoliatae Chifu et al. 2014 were installed of Buseşti lake.

As I have shown before (Ciortan & Negrean 2013), the lagg has the 12-15 m wide and seems fueled with water from the bog and partly by some sources existing in the northern part of the bog.

The species list of lagg: *Agrostis stolonifera* subsp. *stolonifera*, *Alisma plantago-aquatica*, *Alnus glutinosa* subsp. *glutinosa*, *Anacamptis palustris* subsp. *elegans, Anthoxanthum odoratum*, *Artemisia vulgaris*, *Ballota nigra* subsp. *nigra*, *Betula pendula*, *Bidens tripartitus*, *Briza media* subsp. *media*, *Calystegia sepium* subsp. *sepium*, *C. hirta*, *C. leporina*, *C. pallescens*, *C. pseudocyperus*, *C. vesicaria, Centaurea phrygia* s. l., *Conium maculatum*, *Dactylis glomerata* subsp. *glomerata*, *Danthonia decumbens*, *Daucus carota* subsp. *carota*, *Dianthus armeria*, *Dryopteris carthusiana*, *Erechtites hieracifolius*, *Erigeron annuus* subsp. *anuus*, *Euphorbia cyparissias*, *Frangula alnus* subsp. *alnus*, *Galium album* subsp. *album*, *G. palustre*, *G. verum* subsp. *verum*, *Genista sagitallis*, *Gratiola officinalis, Holcus lanatus* subsp. *lanatus*, *Iris pseudacorus*, *Juglans regia*, *Juncus effusus* subsp. *effusus*, *Lactuca serriola*, *Lemna minor*, *Leucanthemum vulgare*, *Leontodon hispidus* subsp. *hispidus*, *Leonurus cardiaca*, *Linaria vulgaris*, *Lotus corniculatus*, *Lycopus europaeus*, *Lysimachia nummularia*, *L. punctata*, *L. vulgaris* subsp. *vulgaris*, *Lythrum salicaria*, *Mentha pulegium*, *Menyanthes trifoliata*, *Oenanthe aquatica*, *O. banatica*, *Phleum pratense* subsp. *pratense*, *Phragmites australis* subsp. *australis*, *Plantago lanceolata*, *Populus tremula*, *Potamogeton natans*, *Potentilla erecta*, *P. reptans*, *Pteridium aquilinum*, *Ranunculus flammula* subsp. *flammula*, *R. repens*, *R. strigulosus*, *Robinia psedoacacia*, *Salix alba*, *S. cinerea*, *S. fragilis*, *Scirpus sylvaticus*, *Scutellaria galericulata*, *Securigera varia*,

Silene flos-cuculi, *Solanum dulcamara*, *Sparganium neglectum*, *Succisa pratensis*, *Thelypteris palustris*, *Trifolium hybridum* subsp. *elegans*, *T. pratense*, *T. repens* subsp. *repens*, *Typha latifolia*, *Utricularia australis*,*Veronica scutellata*, *Viola tricolor* subsp. *tricolor*.

Phytocenoses as Thelypteridi-Alnetum Klika 1940, Typhetum latifoliae Lang 1973, Carici pseudocyperi-Menyanthetum Soó 1955 - sass. menyanthetosum trifoliatae and Utricularietum neglectae Müller at Görs 1960 associations have settled in this lagg area; also, many transgressive species from the meadow around the lake.

The importance of the The Busești Lake marsh resides in the fact that preserves:

- Natura 2000 habitat: 7140 Transition mires and quaking bogs (HdR5408 Southeast Carpathian oligotrophic peatlands with *Carex limosa* built by the Caricetum limosae Br.-Bl. 1921 association.
- Phytocenoses of some rare associations in Romania: Carici-Menyanthetum Soó 1955 - sass. menyanthetosum trifoliatae.
- Species of community interest whose conservation requires the designation of special conservation areas: *Lycopodiella inundata* (glacial relict in Romania's flora).
- Species of plants of community interest who is sampling from nature and exploitation are likely to be subject to management measures: *Sphagnum palustre*.
- Rare species at national level: *Anacamptis palustris* subsp. elegans, Carex *limosa*, *Menyanthes trifoliata*, *Utricularia australis* (Oltean & al. 1994).
- Significant populations of rare species at the level of the Geopark: *Carex echinata*, *C. limosa*, *C. pseudocyperus*, *C. rostrata*, *Dryopteris carthusiana*, *Erechtites hieracifolius*, *Ranunculus flammula* subsp. *flammula*, *Thelypteris palustris*, *Utricularia australis*.
- Important species from the specific latitudine: *Carex echinata, C. rostrata*, *C. vesicaria*, *Eriophorum angustifolium*, *Lycopodiella inundata*, *Menyanthes trifoliata*, *Oenanthe aquatica*, *Thelypteris palustris*.

Pressures on the described habitats: I have not identified.

CONCLUSIONS

Wetlands from the Geopark Plateau Mehedinți are important for conservation for the following reasons:

1. It conserves relict plant species, rare plants of national and European interest.
2. The peat deposit offers the possibility to reconstruct the Quaternary history. Studying bogs can provide us with information about climate change over the past 8.000 years. Peat is a good preservation medium for pollen, seeds and fruits that fell thousands of years ago in the peat. The study of these elements in the peat layer also gives us the possibility to predict future changes.
3. It preserves biocoenosis that indicate ecological and phytosociological problems.
4. They are located in the southernmost point of the Carpathian Mountains.

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