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ASSESSING AND MAPPING PLANT SPECIES AND HABITATS FROM THE SPRINGS COMPLEX OF CORBII CIUNGI PROTECTED AREA

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ABSTRACT. The article highlights the plant species assessed from the springs complex within the Corbii Ciungi protected area, the distribution of the habitats specified in the Romanian law, and the future potential habitats that might develop if the anthropic impact either diminishes or disappears.

Keywords: plants, habitats, mapping, protected area, Corbii Ciungi.

REZUMAT. Evaluarea și cartarea speciilor și habitatelor din Aria Protejată Complexul de Izvoare de la Corbii Ciungi. Articolul evidențiază speciile de plante evaluate pe teritoriul ariei protejate Corbii Ciungi, distribuția habitatului evidențiat de legislația românească și habitatele potențiale, viitoare, care s-ar putea dezvolta dacă presiunea impactului antropic s-ar diminua sau ar dispărea.

Cuvinte cheie: plante, habitate, cartare, arie protejată, Corbii Ciungi.

INTRODUCTION

Evaluation of the biodiversity gives a better understanding of the impact of management actions and identifies many of the ways in which biodiversity is affected (VGDSE, 2004).

In 1959 (Botoşăneanu & Negrea, 1962) started a systematic study of springs and phreatic waters from the central area of the Romanian Plain and the scientists discovered a complex of rivulets, springs and wetlands in the Neajlov

River valley near the village of Corbii Ciungi. Following this study, the scientists developed a systematic faunistic and ecological approach in the area named after the closest settlement: Corbii Ciungi. In those years, human activities had just started to act upon the complex of springs, rivulets, wetlands and adjacent areas. The approach highlighted the high species diversity and the relict, rarely endemic, character of the species identified there. The studies continued in 70 springs and spring complexes within the Romanian Plain (Motaș et al., 1962). The springs complex of Corbii Ciungi was declared protected in 1966 and named Springs Complex of the Corbii Ciungi Natural Reserve. The Natural Reserve is defined as the springs complex which feeds two rivulets, each of 800-1000 m length. The rivulets comprise between them an area of about 90,000 sq.m. consisting of cultivated fields. The entire complex used to be easily recognised from a distance as an area totally hidden under woody vegetation of alder, willow, etc. within the completed deforested area of the plain. The vegetation was lush and diverse (comprising mosses, Hepaticae, Equisetaceae, ferns and hygrophilous phanerogams) in places where the spring water flooded and waterlogged the flat surfaces.

The floodplain woodland which sheltered the springs complex was made up of tall, vigorous trees and included woody species such as: *Salix fragilis* L., *Salix cinerea* L., *Alnus glutinosa* (L.) Gaertn., *Viburnum opulus* L., *Rhamnus frangula* f. *latifolia* Dipp., *Ligustrum vulgare* L., *Corylus avellana* L., *Euonymus verrucosus* Scop., *Cornus sanguinea* L., etc. The woodland had a high importance in maintaining the stenothermic biotopes of cool water, with their corresponding biocoenoses. In the absence of the forest that had been eradicated in former times, the presence of woody vegetation around the springs protected these biotopes against excessive insolation, of the impact of drying wind, and erosion following excessive precipitation. Bryophytes were present that are typical of cold springs and wetlands in forests, mosses: *Cratoneuron commutatum* (Hedw.) G. Roth and *Brachythecium rivulare* Schimp.; liverworts: *Aneura pinguis* (L.) and especially *Chiloscyphus polyanthus* (L.) and developed over larger areas than anywhere else on the Romanian Plain.

The springs complex is situated in Dâmbovița County at ca. 800 m distance from Neajlov River left bank (Fig. 1) at N: 44° 31' E: 25° 30'. Between the two rivulets and surrounding they are either cultivated fields (mainly of corn and wheat) or abandoned land.

The history of the natural reserve reflects a lack of real protection and its naturalness diminished with time, especially after 1989 (end of Communism in Romania) when the land was returned to its former owners (Negrea & Negrea, 1998-1999). The floodplain woodland lost all the adult trees and became dominated by immature trees and shrubs, in some areas being completely destroyed by cutting or burning.

An update of the study was made by Ciubuc in 2007. Other recent studies have been published regarding the ground beetle fauna (Lotrean, 2012) and

concluded that the ground beetle association of the present habitat was similar to that of the original riparian habitats of the protected area.

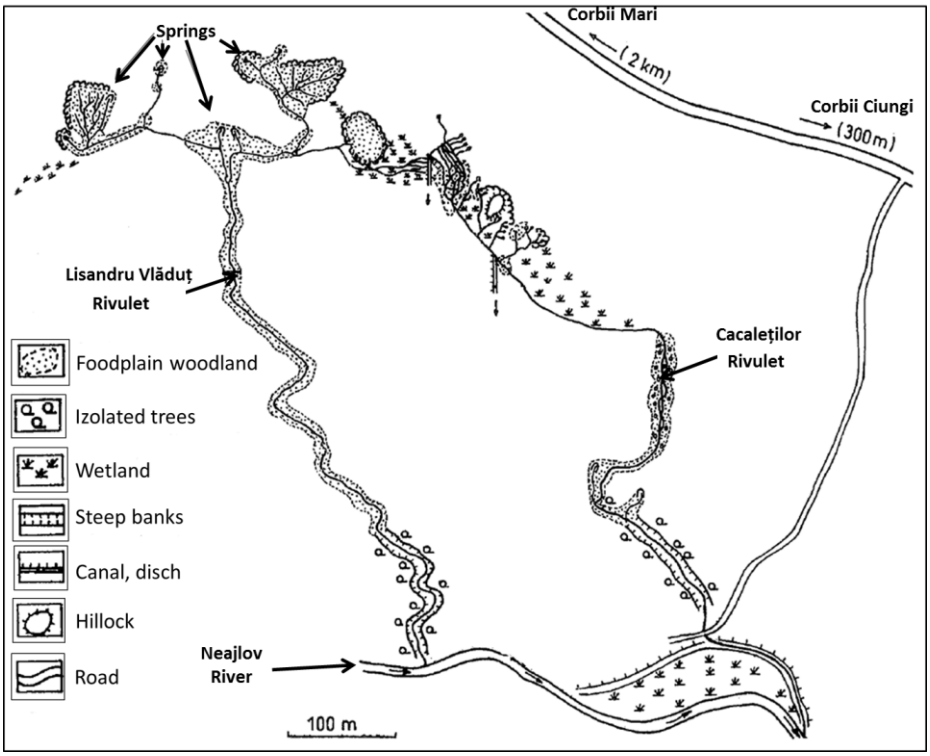

Figure 1 - Schematic representation of the Springs Complex of Corbii Ciungi (after Negrea & Negrea, 1998-1999).

MATERIALS AND METHODS

In 2012 the protected area Springs Complex of Corbii Ciungi still consisted of the two rivulets and an area defined as the small running waterbodies that are formed by water emerging at the soil surface (springs) near northern limit of the area studied. At these northern limits, there are small marshy microhabitats feeding the two rivulets that both discharge into the Neajlov River (Fig. 2).

Our study of 2012 combined an inventory of the vascular plants species and bryophytes within the Natural Reserve Springs Complex of Corbii Ciungi with a previous analysis of the literature describing the species recorded in previous years.

For mapping purposes, the data collected from field trips with GPSmap 76CSx were visualised on Google Earth.

For taxonomy and ecological characterization of the plant species we used Ciocârlan (Ciocârlan, 2009). For taxonomy of mosses we used Mohan (Mohan, 1998).

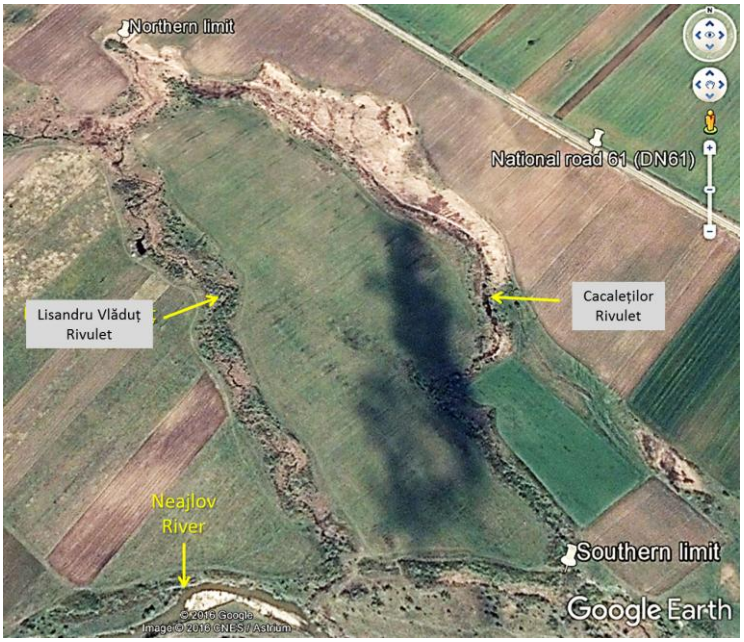

Figure 2 - Representation of the Springs Complex of Corbii Ciungi in 2012 (https://earth.google.com/).

RESULTS AND DISCUSSIONS

Species

In 2012 we added another 50 species to the total list recorded in previous studies (Tab. 1). These previous studies had not focused on accurate recording of all the plant species and therefore a comprehensive list of plant species does not exist. The bryophyte species included are mentioned in all studies conducted in the area (Tab. 2).

Table 1 - List of plant species identified on reservation territory.

No.	Family	Species	1961-1962	2007	2012
1.	Alismataceae	*Alisma plantago aquatica* L.		+	+
2.	Apiaceae (Umbelliferae)	*Daucus carota* L.		+	+
3.	Apiaceae (Umbelliferae)	*Eryngium campestre* L.			+
4.	Apiaceae (Umbelliferae)	*Oenanthe aquatica* (L.) Poir.	1-2	+	+
5.	Apiaceae (Umbelliferae)	*Aegopodium podagraria* L.		+	+
6.	Apiaceae (Umbelliferae)	*Berula erecta* (Huds.) Coville		+	+
7.	Apiaceae (Umbelliferae)	*Orlaya grandiflora* (L.) Hoffm.			+
8.	Apiaceae (Umbelliferae)	*Sium latifolium* L.	1-2	+	+

No.	Family	Species	1961-1962	2007	2012
9.	Aristolochiaceae	*Aristolochia clematitis* L.			+
10.	Aspleniaceae	*Thelypteris palustris* Schott	1-2	+	1-2
11.	Asteraceae (Compositae)	*Conyza canadensis* (L.) Cronquist		+	+
12.	Asteraceae (Compositae)	*Erigeron annuus* (L.) Pers.			+
13.	Asteraceae (Compositae)	*Eupatorium cannabinum* L.		+	+
14.	Asteraceae (Compositae)	*Xanthium strumarium* L.		+	+
15.	Asteraceae (Compositae)	*Achillea millefolium* L.		+	+
16.	Asteraceae (Compositae)	*Arctium lappa* L.			+
17.	Asteraceae (Compositae)	*Bidens cernua* L.		+	+
18.	Asteraceae (Compositae)	*Bidens tripartita* L.		+	+
19.	Asteraceae (Compositae)	*Centaurea cyanus* L.			+
20.	Asteraceae (Compositae)	*Cichorium intybus* L.			+
21.	Asteraceae (Compositae)	*Cirsium arvense* (L.) Scop.		+	+
22.	Asteraceae (Compositae)	*Cirsium vulgare* (Savi) Ten.			+
23.	Asteraceae (Compositae)	*Inula britannica* L.			+
24.	Asteraceae (Compositae)	*Pulicaria dysenterica* (L.) Bernh.		+	+
25.	Betulaceae	*Alnus glutinosa* (L.) Gaertn.	4	+	2
26.	Boraginaceae	*Anchusa officinalis* L.			+
27.	Boraginaceae	*Symphytum officinale* L. s. str.		+	+
28.	Brassicaceae (Cruciferae)	*Berteroa incana* (L.) DC.		+	+
29.	Brassicaceae (Cruciferae)	*Cardamine amara* L.	1-2		1
30.	Brassicaceae (Cruciferae)	*Cardaria draba* (L.) Desv.			+
31.	Brassicaceae (Cruciferae)	*Nasturtium officinale* W. T. Aiton		+	+
32.	Butomaceae	*Butomus umbellatus* L.		+	+
33.	Cannabaceae	*Humulus lupulus* L.		+	+
34.	Caprifoliaceae	*Sambucus ebulus* L.			+
35.	Caprifoliaceae	*Sambucus nigra* L.			+
36.	Caprifoliaceae	*Viburnum opulus* L.	+	+	+
37.	Celastraceae	*Euonymus verrucosus* Scop.	+	+	+
38.	Ceratophyllaceae	*Ceratophyllum submersum* L.		+	+
39.	Convolvulaceae	*Calystegia sepium* (L.) R. Br.		+	+
40.	Convolvulaceae	*Convolvulus arvensis* L.			+
41.	Cornaceae	*Cornus sanguinea* L.	+	+	+
42.	Corylaceae	*Corylus avellana* L.	+		+
43.	Cyperaceae	*Carex hirta* L.	+		+

No.	Family	Species	1961-1962	2007	2012
44.	Cyperaceae	*Carex pseudocyperus* L.	+		+
45.	Cyperaceae	*Carex vulpina* L.	+		+
46.	Cyperaceae	*Schoenoplectus lacustris* (L.) Palla	+	+	+
47.	Cyperaceae	*Scirpus sylvaticus* L.	+		+
48.	Dipsacaceae	*Cephalaria transylvanica* (L.) Roem. et Schult.			+
49.	Dipsacaceae	*Dipsacus fullonum* L.		+	+
50.	Dipsacaceae	*Dipsacus laciniatus* L.			+
51.	Equisetaceae	*Equisetum telmateia* Ehrh.	+	+	+
52.	Euphorbiaceae	*Euphorbia cyparissias* L.		+	+
53.	Fabaceae (Leguminosae)	*Amorpha fruticosa* L.			+
54.	Fabaceae (Leguminosae)	*Astragalus glycyphyllos* L.			+
55.	Fabaceae (Leguminosae)	*Coronilla varia* L.		+	+
56.	Fabaceae (Leguminosae)	*Lathyrus odoratus* L.			+
57.	Fabaceae (Leguminosae)	*Lathyrus sylvestris* L.		+	+
58.	Fabaceae (Leguminosae)	*Lotus corniculatus* L.		+	+
59.	Fabaceae (Leguminosae)	*Melilotus officinalis* (L.) Lam.		+	+
60.	Fabaceae (Leguminosae)	*Ononis spinosa* L.		+	+
61.	Fabaceae (Leguminosae)	*Robinia pseudoacacia* L.			+
62.	Fabaceae (Leguminosae)	*Vicia cracca* L.			+
63.	Fabaceae (Leguminosae)	*Vicia lutea* L.			+
64.	Fabaceae (Leguminosae)	*Trifolium fragiferum* L.		+	+
65.	Hydrocharitaceae	*Elodea canadensis* Michx.			+
66.	Hypericaceae	*Hypericum tetrapterum* Fr.		+	+
67.	Iridaceae	*Iris pseudacorus* L.			+
68.	Juncaceae	*Juncus conglomeratus* L. em. Leers	+		+
69.	Juncaceae	*Juncus effusus* L.		+	+
70.	Juncaceae	*Juncus articulatus* L. em Richt.	+		
71.	Lamiaceae (Labiatae)	*Lycopus europaeus* L.		+	+
72.	Lamiaceae (Labiatae)	*Mentha aquatica* L.		+	+
73.	Lamiaceae (Labiatae)	*Mentha longifolia* L.		+	+
74.	Lamiaceae (Labiatae)	*Origanum vulgare* L.			+
75.	Lamiaceae (Labiatae)	*Salvia nemorosa* L.			+
76.	Lamiaceae (Labiatae)	*Salvia pratensis* L.		+	+
77.	Lamiaceae (Labiatae)	*Scutellaria hastifolia* L.		+	+
78.	Lemnaceae	*Lemna minor* L.		+	+

No.	Family	Species	1961-1962	2007	2012
79.	Liliaceae	*Muscari comosum* (L.) Mill.			+
80.	Liliaceae	*Ornithogalum pyramidale* L.			+
81.	Lythraceae	*Lythrum salicaria* L.			+
82.	Moraceae	*Morus alba* L.			+
83.	Oleaceae	*Ligustrum vulgare* L.		+	+
84.	Onagraceae	*Epilobium palustre* L.			+
85.	Onagraceae	*Oenothera biennis* L.		+	+
86.	Orchidaceae	*Dactylorhiza maculata* (L.) Soó			+
87.	Plantaginaceae	*Plantago lanceolata* L.			+
88.	Poaceae	*Setaria viridis* (L.) Beauv.			+
89.	Poaceae (Gramineae)	*Agrostis stolonifera* L.		+	+
90.	Poaceae (Gramineae)	*Bromus arvensis* L.			+
91.	Poaceae (Gramineae)	*Bromus tectorum* L.			+
92.	Poaceae (Gramineae)	*Calamagrostis arundinacea* (L.) Roth		+	+
93.	Poaceae (Gramineae)	*Calamagrostis pseudophragmites* (Haller fil.) Koeler			+
94.	Poaceae (Gramineae)	*Dactylis glomerata* L.		+	+
95.	Poaceae (Gramineae)	*Phragmites australis* (Cav.) Steud.		+	1
96.	Poaceae (Gramineae)	*Echinochloa crus-galli* (L.) Beauv.			+
97.	Polygonaceae	*Polygonum bistorta* L.			+
98.	Polygonaceae	*Polygonum hydropiper* L.		+	+
99.	Polygonaceae	*Polygonum lapathifolium* L.			+
100.	Potamogetonaceae	*Potamogeton crispus* L.		+	+
101.	Potamogetonaceae	*Potamogeton natans* L.		+	+
102.	Potamogetonaceae	*Potamogeton pectinatus* L.		+	+
103.	Primulaceae	*Lysimachia nummularia* L.	+	+	+
104.	Primulaceae	*Lysimachia vulgaris* L.		+	+
105.	Ranunculaceae	*Clematis vitalba* L.		+	+
106.	Rosaceae	*Agrimonia eupatoria* L.		+	+
107.	Rosaceae	*Fragaria vesca* L.			+
108.	Rosaceae	*Potentilla reptans* L.		+	+
109.	Rosaceae	*Prunus spinosa* L.		+	1
110.	Rosaceae	*Rosa canina* L. s.l.		+	+
111.	Rosaceae	*Rubus caesius* L.		+	+
112.	Rubiaceae	*Galium aparine* L.			+

No.	Family	Species	1961-1962	2007	2012
113.	Rubiaceae	*Galium palustre* L.	+	+	+
114.	Rubiaceae	*Galium palustre* L. ssp. *elongatum* (C. Presl) Lange		+	+
115.	Rubiaceae	*Galium rubioides* L.		+	+
116.	Rubiaceae	*Galium verum* L.			+
117.	Salicaceae	*Populus alba* L.	1	+	+
118.	Salicaceae	*Salix alba* L.	1	+	+
119.	Salicaceae	*Salix caprea* L.		+	+
120.	Salicaceae	*Salix fragilis* L.	1	+	+
121.	Scrophulariaceae	*Gratiola officinalis* L.			+
122.	Scrophulariaceae	*Linaria vulgaris* Mill.		+	+
123.	Scrophulariaceae	*Scrophularia umbrosa* Dumort		+	+
124.	Scrophulariaceae	*Verbascum phoeniceum* L.			+
125.	Scrophulariaceae	*Verbascum phlomoides* L.			+
126.	Scrophulariaceae	*Veronica beccabunga* L.		+	+
127.	Solanaceae	*Solanum dulcamara* L.		+	+
128.	Sparganiaceae	*Sparganium erectum* L. em. Rchb.	+	+	+
129.	Typhaceae	*Typha angustifolia* L.		+	+
130.	Typhaceae	*Typha latifolia* L.			+
131.	Ulmaceae	*Ulmus minor* Mill.		+	+
132.	Urticaceae	*Urtica dioica* L.		+	+
133.	Valerianaceae	*Valeriana officinalis* L.			+

Table 2 - Bryophyte species present on the reserve territory.

Aneura pinguis (L.)	*Cratoneuron commutatum* (Hedw.) G. Roth
Brachythecium rivulare Schimp.	*Leucobryum glaucum* (Hedw.)
Chiloscyphus polyanthus (L.)	S*phagnum* spp.

Individuals of *Prunus spinosa* L. formed bands along the river/spring sides/margins, accompanied by *Euonymus verrucosus* Scop., *Rosa canina* L., *Cornus sanguinea* L., *Ligustrum vulgare* L., etc. Shrubby vegetation (*Salix alba* L., *Salix cinerea* L., *Alnus glutinosa* (L.) Gaertn., *Viburnum opulus* L. and other species) is scarce and shorter, forming woody curtains separating the wetter areas from surrounding cultivated fields.

We cannot now say that the floodplain woodland that formerly existed is visible from distance and today it is hard enough to distinguish the studied area

from the surrounding fields. The agricultural fields are used for planting corn and sunflower, but many of them are abandoned.

Most of the species from the area are xero-mesophilous (preferring dry to semi-dry places), emphasising the present arid nature of this area despite the presence in the immediate vicinity of the wetland area, rivulets and the Neajlov River. There is a massive development of *Daucus carota* L., a eurythermic (tolerant of a wide range of temperature), euryphotic (tolerant of a wide range of light intensities) and euryacid (tolerant of a wide range of pH) species. A mesophilous species with Mediterranean origins, *Dipsacus fullonum* L., appears in dense patches of individuals whose height often surpasses 2 m. These two species (together with others accompanying) confer a ruderal character to the study area.

Ciubuc (Ciubuc, 2007) does not mention *Corylus avellana* L., though we found two young individuals in 2012, one of them covered with hop (*Humulus lupulus* L.). The 2007 study also mentions that *Phragmites australis* (Cav.) Trin. ex Steud and *Typha angustifolia* L. covered more than 80%. In 2012 these species were less extensive, though still covering large areas in relatively humid locations on water margins. *P. australis* has a high biomass in depressions and within small patches formed in flat areas where the groundwater is closer to the surface. *Lysimachia nummularia* L. individuals are quite dense creeping on the soil surface. Three invasive species are present here: *Conyza canadensis* (L.) Cronquist (herbaceous annual), *Sambucus ebulus* L. (perennial herb) and *Amorpha fruticosa* L. (perennial shrubs). From the total list of species recorded here, only *Dactylorhiza maculata* (L.) Soó has conservation importance at national or international level (Oltean et al., 1994).

The species recorded in 2012 indicate a variety of soil types within different small areas, reflecting wetland, semi-arid and dry conditions.

Since the 1970s, this oasis of relict flora and fauna has been modified due to the influence of human activities. The main modification was brought about by deforestation around the complex of rivulets and floodplain woodland. Currently in the 2010s, a wide range of actions are modifying the biotopes and biocoenoses: intensive grazing, cutting of trees and shrubs, conversion of some sections of rivulets into hollows used by cattle for drinking, usage of water for irrigation, as well as cultivation of land between the two collector rivulets and around the wetland. By 2012, the floodplain woodland had almost been destroyed, with no surviving trees, whilst shrubs are quite rare, being most abundant in those parts of the wetlands that are less accessible to humans and domestic animals.

Most of the species recorded in the studied area require humid places for development and survival. Thus, 66.92% of the entire registered flora is mesophilous (growing on almost dry soils to dry-moist soils) or hygrophilous (growing on dry-moist soils to wet soils). These species root into the water or into wet soil. Some of the species are hydrophytes (hygrophilous) or hydro-hygrophyte, growing on soils that range from permanently wet to submerged, with the regeneration organs under water.

The percentage of xerophytic species (growing on dry soils) and xero-mesophytic (growing on dry to moist soils) is low (24.81%). These species grow near the agricultural fields, in the centre of the site (the high area between the rivulets) of the studied area and in the abandoned agricultural field surrounding Corbii Ciungi village.

The presence of many species that need water and of only a small number of species that prefer arid soils emphasises that the studied area is an "oasis" in the plain and near towns and rural areas.

Most of the species are herbaceous perennials, together with a few species of trees and shrubs. Assessing all the species recorded, most are common at the national level, with none defined as rare or occasional.

Habitats

The only habitat here specified by the Romanian Law 5/2000 is 7120 "Degraded raised bogs still capable of natural regeneration" (Fig. 3).

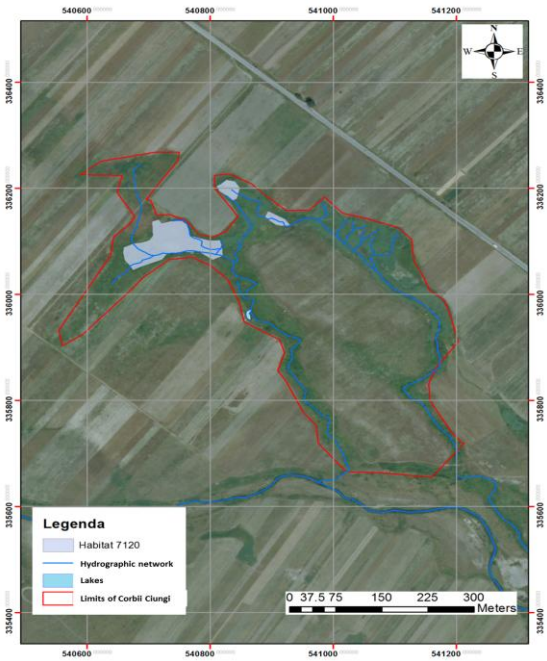

Figure 3 - Mapping 7120 Habitats of Corbii Ciungi.

This habitat type is described in Gafta and Mountford (Gafta & Mountford, 2008) as comprising raised bogs which have suffered a major perturbation of the natural hydrological regime of the peat layer. This perturbation has anthropogenic origins, leading to drying of the peatland surface and/or changes or disappearance of some species.

The vegetation of these disturbed peatlands usually contains, as main elements, species that are typical of active raised bogs (code 7110*) but the relative abundance of these species is different. Degraded raised bogs 7120 are not classified under specific vegetation associations, but only as degraded variants of the associations mentioned for habitat type 7110*.

The habitat area at Corbii Ciungi is small and could survive in wetlands where the access of humans and cattle is difficult or limited. Over the entire extent of the studied area, there are small fragments that might become valuable wetland habitats (considered here as "potential habitats"), but only if appropriate management actions are applied in the future and for the long term (Tab. 3).

Table 3 - The type of potential habitats from the Corbii Ciungi protected area (after Doniță et al., 2005).

Romanian habitat 3122 Ponto-pannonic scrubs with blackthorn (*Prunus spinosa*) and common hawthorn (*Crataegus monogyna*). **NATURA 2000:** 40A0* Subcontinental peri-Pannonic scrub. **EMERALD:** 31.8B1 Pannonic and sub-Pannonic thickets. **CORINE:** 31.8B3 South-eastern sub-Mediterranean. **PAL. HAB:** 31.8B131 Peri-Pannonic hawthorn-blackthorn scrub. **EUNIS:** F3.241 Central European subcontinental thickets. **Plant association:** *Pruno spinosae –Crataegetum* Soó (1927) 1931 (Syn.: *Prunetum moldavicae* Dihoru (1969) 1970, *Rubo caesii – Prunetum spinosae* Rațiu et Gergely 1979).
Conservation status: moderate, Emerald priority habitat.
Romanian habitat 4403 Danubian-pannonic forests of black alder (*Alnus glutinosa*) with *Iris pseudacorus*. **NATURA 2000: –** **EMERALD:** !44.9115 Eastern Carpathian alder swamp woods. **CORINE: –** **PAL. HAB:** 44.91151 Pre-Carpathian alder swamp woods. **EUNIS:** G1.4115 Eastern Carpathian *Alnus glutinosa* swamp woods. **Plant association:** *Carici acutiformi-Alnetum* (Dostal 1933) Soó 1963. **Type of ecosystems:** 9310 Floodplain woodland of black alder with *Carex-Iris pseudacorus.*
Conservation status: very high.
Romanian habitat 4405 Daco-getic forests of black poplar (*Populus nigra*) with *Rubus caesius*. **NATURA 2000:** 91E0*Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*). **EMERALD: –** **CORINE: –** **PAL. HAB:** 44.6612 Western Pontic white –black poplar galleries. **EUNIS:** G1.365 Central European poplar galleries. **Plant association:** S*alicetum albae-fragilis* Issler 1926 em. Soó 1957. **Type of ecosystems:** 9317 Floodplain woodland of black poplar with *Rubus caesius* and *Galium aparine*.
Conservation status: very high.

Romanian habitat 4406 Danubian-Pannonic forests of white poplar (*Populus alba*) with *Rubus caesius*. **NATURA 2000:** 92A0 *Salix alba* and *Populus alba* galleries. **EMERALD:** !44.66 Ponto-Sarmatic mixed poplar riverine forest. **CORINE: –** **PAL. HAB:** 44.6611 Western Pontic white poplar galleries. **EUNIS:** G1.365 Central European poplar galleries. **Plant association:** *Salicetum albae-fragilis* Issler 1926 em. Soó 1957. **Type of ecosystems:** 9617 Floodplain woodland of white poplar with *Rubus caesius-Galium aparine.* Conservation status: very high.
Romanian habitat 4407 Danubian forests of white willow (*Salix alba*) with *Rubus caesius*. **NATURA 2000:** 92A0 *Salix alba* and *Populus alba* galleries. **EMERALD:** !44.66 Ponto-Sarmatic mixed poplar riverine forest. **CORINE: –** **PAL. HAB:** 44162 Pontic willow galleries. **EUNIS:** G1.1142 Ponto-sarmatic steppe willow galleries. **Plant association:** *Salicetum albae-fragilis* Issler 1926 em. Soó 1957. **Type of ecosystems:** 9817 Floodplain woodland of willow with *Rubus caesius-Galium aparine.* Conservation status: high.
Romanian habitat 5305 Danubian communities with *Typha angustifolia* and *T. latifolia*. **NATURA 2000: –** **EMERALD:** 22.31 Euro-Siberian perennial amphibious communities. **CORINE:** 53.13 Reedmace (*Typha*) beds. **PAL. HAB:** 53.13 Reedmace beds. **EUNIS:** C3.231/232 *Typha latifolia/T. angustifolia* beds. **Plant association:** *Typhetum angustifoliae* Piggnati 1953, *Typhetum latifoliae* G. Lang.1973. Conservation status: low.

CONCLUSIONS

Shrubby vegetation at Corbii Ciungi is scarce and shorter, forming bands (as woody curtains) along the margins of the rivulets. The former floodplain woodland no longer exists today, and the single community of interest that is still present is the habitat 7120 Degraded raised bogs still capable of natural regeneration but on small areas.

Assessment of the species distinguishes small areas with different soil types, indicating wetlands, semi-arid and dry areas.

If the degree and intensity of the anthropic impact (deforestation and destruction by fire of the remnant shrubby vegetation, transformation of some sections of rivulets into hollows used by cattle for drinking, usage of the water for irrigation, etc.) continues, the area will be totally destroyed.

If the degree and intensity of the anthropic impact diminishes or disappears in the future, the fragments of potential habitats assessed in the area could develop and lead to the natural restoration of the "oasis" that formerly existed in the plain region and near towns and rural areas. Such future habitats will have high or very high conservation status.

Through their existence in the region and through their national and EU community interest, such restoration would bring more health and wealth to the people that now own the agricultural fields.

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