



**REVIEW OF HABITATS FROM  
ANNEX I TO COUNCIL  
DIRECTIVE 92/43/EEC  
POTENTIALLY OCCURRING IN  
BULGARIA AND THE  
AVAILABILITY OF REFERENCES  
ABOUT THEIR DISTRIBUTION**

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## **Legend**

- I. Habitats, which are assessed by experts to cover more than 60% of the country.
- II. Habitats, whose national distribution can be defined to a certain extent of credibility on the base of expert assessment, but the percent of credibility is below 50-60%.
- III. Habitats, whose national distribution cannot be satisfactorily defined on the base of expert assessment.

3, 22 – Number of the literary source (see References)

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## **Coastal and halophytic habitats**

### **Open sea and tidal areas**

1110 Sandbanks which are covered by sea water all the time – 11.125, 11.22, 11.31 – They occur along the Black Sea Coast (Southern and Eastern) and are represented by submerged meadows of *Zostera marina* II

1130 Estuaries – 13.2, 11.2 – They occur along the Black Sea Coast, but mostly along its Southern part. The Ropotamo, Veleka and Rezovska Rivers have such estuaries. I

1140 Mudflats and sandflats not covered by sea water at low tide – 14. – Several bays along the Southern Black Sea Coast (Chengeneskele) and others; a more detailed research should be carried out. I

1150 Coastal lagoons – 21 – Pomoriisko Lake, Shablenksa Tuzla, Balchishka Tuzla, Taukliman, Arkutino, Alepu, etc. - I, 63, 64

1170 Reefs – 11.24, 11.25 – Under-water rocks covered with benthic fauna, occurring mostly along the Southern Black Sea Coast, but probably along the Northern one too. III

1210 Annual vegetation of drift lines – 17.2 – Gravel beaches all along the Black Sea Coast; they are characteristic of the Shabla and Durankulak regions. II

1220 Perennial vegetation of stony banks - 17.3 – It occupies the same places as the previous habitat. - II

1240 Vegetated sea cliffs of the Mediterranean Coasts with endemic *Limonium* spp. – 18.22 – Sozopol, Ahtopol, Maslen Nos, Siliстра, Rezovo, Kaliakra, Tjulenovo, Kamen Briag and others. II

### **Atlantic and continental salt marshes and salt meadows**

1310 *Salicornia* and other annuals colonising mud and sand – 15.1 – They occur along the Southern Black Sea Coast, in the regions of Burgas, Pomorie, Ravadinovo, Kraimorie, and in some sites close to Varnensko Lake and Kartaliysko Marsh (Durankulak). – III, 34, 38

1340 Inland salt meadows – 15.4 – They are mainly spread in the Trakiyska and Tundjanska lowlands – Aytos, Radnevo, Straldja, Atolovo, Kermen, Tunkovo, the villages of Mladovo, Zhelju Voivoda, Kovachevo (in the region of Sliven), Palauzovo, Roza (in the region of Yambol), Opulchenetz (in the region of Stara Zagora) and others. – III, 34, 38

### **Mediterranean and thermo-Atlantic salt meadows**

1410 Mediterranean salt meadows (*Juncetalia maritimi*) – 15.5 – Communities of coastal rush on salty sites beside water bodies - Ravadinovo, Mandra, Varnensko Lake, Durankulak, Ropotamo. – III, 64

### **Salt and gypsum salt steppes**

1530 Pannonic salt steppes and salt meadows – 15.A1 – Salt meadows in Karabozki Lowlands, and in the valley of Studena River in the region of Svishtov and Pavlikeni. – III, 35, 38

## **Coastal dunes and inland dunes**

### **Sea dunes of the Atlantic, North Sea and Baltic Coasts**

2110 Embryotic shifting dunes – 16.211 – Along the Black Sea Coast – Nesebar, Sozopol, Ropotamo, Durankulak, Shabla, Kamchiya and others. – II, 10, 74

2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) – Along the Black Sea Coast – Nesebar, Sozopol, Ropotamo, Durankulak, Shabla, Kamchiya and others. – II, 10, 22, 73, 74

2130 Fixed coastal dunes with herbaceous vegetation (grey dunes) – 16.221 to 16.227 They are adjacent to the above mentioned and occupy the same places. – II, 10, 22, 73, 74

2160 Dunes with *Hippophae rhamnoides* – 16.251 – They could probably be found on the Galata Cape. Additional research should be carried out. III

2180 Wooded dunes of the Atlantic, Continental and Boreal region – 16.29 – They occur in the dense forests of Kamchiya and Ropotamo. – II, 74

2190 Humide dune slacks – 16.3=16.31 to 16.35 – They have been discovered in the Kamchiya dense forests, and probably occur also in other sites with large dune complexes. Additional research should be carried out. II

### **Inland dunes, old and decalcified**

2340 Pannonic inland dunes –64.71 – These are the dunes of sandy loess in the Karabooazka and Svishtovsko-Belenska Lowlands, possibly in the region of Archar, near Vidin. III

## **Freshwater habitats**

### **Standing water**

3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletalia uniflorae* and/or *Isoeto - Nanojuncetea* 22.12 x (22.31 and 22.32) – In several mountain lakes with water vegetation. II

3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. - 22.11 or 22.15) x 22.44 – Karst springs with *Chara* algae communities all over the country, which should be studied. They could probably be found in the Fore-Balkan and Vrachanska Mountain. Such waters have been ascertained near Zlatna Panega, Karlukovo and on the Devetashko Plateau. – III, 84

3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* – type vegetation - 22.13 x (22.41 or 22.421) – Lakes and marshes along the Danube and the Black Sea Coast – Persinski marshes, Srebarva, Garvan, Maluk Preslavetz, Shabla, Durankulak, old river-beds along the valleys of the Ogosta, Iskar, Vit, Ossum, Yantra, Maritsa and Tundja rivers, some bogs in the Kamchiya dense forests. – III, 3,54,63,64,73,83

3160 Natural dystrophic lakes and ponds - 22.14 – Dragomansko Marsh, some of Smolyanski and Chairski Lakes, Boyanski marshes and probably some smaller lakes in the Vitosha, Rhodope, Rila and Pirin Mountains. – II or III, 54, 63, 64

## **Running water**

3220 Alpine rivers and the herbaceous vegetation along their banks - 24.221 and 24.222 – The upstream parts of all rivers in the Rhodope, Pirin, Rila, Vitosha, Central and Western Balkan Mountains. II

3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitrico-Batrachion* vegetation - 24.4 Water courses of gravel riverbeds with submerged vegetation in all the country – e.g. Maritsa, Vit, Chernelka rivers and others. - III

3270 Rivers with muddy banks with *Chenopodium rubri* p.p. and *Bidention* p.p. vegetation – 24.52 – Alluvial silts with terophytic water-loving vegetation all along the Danube bank from Vidin to Silistra. – III, 60

## **Temperate heath and scrubs**

4030 European dry heaths – 31.2 – These are most probably the thermo-atlantic scrub formations of *Calluna* and *Erica* in the Strandja Mountain. - II

4060 Alpine and Boreal heaths – 31.4 - II

31.43 Mountain dwarf juniper scrubs – *Juniperus nana* – In all high mountains, in which juniper scrubs occur. – II, 5, 6, 11, 17, 36, 87, 105, 106, 107

31.46 *Bruckenthalia* heaths – They occur in all high mountains, mostly in the Balkan Mountains, Rhodopes and Rila. II

31.47 Alpide bearberry heaths *Mugo-Rhododendretum hirsutum* – They occur on limestone sites mostly in Slavyanka and Pirin, but also in the Rila, Balkan, Rhodope and Vitosha Mountains. II

31.4A Mountain avens maths – *Dryas octopetala* – Patches of Mountain Avens, in which the species is a dominant or co-dominant, occur in the Rila, Pirin, Slavyanka and Central Balkan Mountains. II

31.4A High mountain dwarf bilberry heaths – Bilberry scrubs in all high Bulgarian mountains. III

31.4B High mountain green weed heaths – *Chamaecitisis absinthioides* scrubs occupying deforested areas, mostly in Ossogovo, but also in the Rila, Slavyanka, Rhodope, Pirin and Belassitza Mountains. III

4070 Bushes with *Pinus mugo* and *Rhododendron hirsutum* (*Mugo-Rhododendretum hirsuti*) – 31.5 – Bushes with *Pinus mugo* in all high Bulgarian mountains – I, 5, 6, 105, 106, 107

4090 Endemo – oro - Mediterranean heaths with gorse – 31.7

31.78 Helleno-Balkanic sylvatic *Astragalus* hedgehog-heaths – Low semi-scrub communities dominated or co-dominated by *Astragalus angustifolius*, on the limestone slopes of the Pirin, Slavyanka, Golo Burdo and Zemenska Mountains. – III, 19, 24

31.7J1. Northern Thracian tragacanth hedgehog heaths - Scrubs dominated or co-dominated by Aytos or Thracian tragacanth on slopes in the region of Aytos, in the Eastern Balkan and Eastern Rhodope Mountains, and probably on other sites too. – II, 21

## **Sclerophyllous scrub (matoral)**

### **Submediterranean and temperate scrub**

5130 *Juniperus communis* formations on heaths or calcareous grasslands – 31.88 – *Juniperus* scrubs on the lower slopes of Vitosha, Balkan Mountain, Western Border Mountains and many other mountains, mostly in the low-mountain part of the country. – III, 36

## **Mediterranean arborescent matorral**

5210 Arborescent matorral with *Juniperus* sp. – 32.131 to 32.136 – Juniperus scrubs on sites with Mediterranean influence – the valleys of Strouma and Mesta, the Eastern Rhodopes. Additional research should be carried out.

32.131 *Juniperus oxycedrus* arborescent matorral – III, 12

32.133 *Juniperus excelsa* and *J. foetidissima* arborescent matorral – II, 55, 52

32.134 *Juniperus communis* arborescent matorral – III

## **Natural and semi-natural grasslands formations**

### **Natural grasslands**

6110 Rupicolous calcareous or basophilic grasslands of the *Alysso-Sedion albi* – 34.11 – Open xerothermal grass communities, mostly terophytic, on calcareous lands all over the Fore-Balkan Mountain, Vrachanska Mountain, Roussenski Lom, in the region of Znepole and Karnobat, Bessaparski Hills, and also in other regions with pioneer communities on calcareous lands. – III, 16, 17, 18

6120 Xeric sand calcareous grasslands – 34.12 – Grass communities on soldered calcareous sandstones – II, probably in the region of Provadiya, Pobitite Kamani.

6170 Alpine and subalpine calcareous grasslands – 36.41 to 36.43, 36.37, 36.38 Alpine and sub-alpine calcareous grasslands – in the Balkan Mountain in the region of Troyan and Kalofer, in the Pirin and Slavyanka Mountains. – I, 5, 6, 34, 36, 11, 87, 105, 106, 107

36.41 Closed calciphile alpine grasslands

36.42 Wind edge naked-rush swards

## **Semi-natural dry grasslands and scrubland facies**

6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometea*) (\*important orchid sites) - 34.31 to 34.34 – Xerothermal grasslands (often secondary) with Spear-grass and Beard-grass in the Danube Plain, Ludogorie, Thracian Lowlands, Tundjanska Plain, the Fore-Balkan, the region of Znepole, the Dobroudja. – III, 15, 16, 17, 34, 35, 36, 40, 44, 55, 57, 88

6220 Pseudo-steppe with grasses annuals of the *Thero-Brachypodietea* – 34.5 – Annual and mixed grass communities dominated or co-dominated by *Trachynia distahya* in the region of Turnovo, the Eastern Rhodopes, Petrich, the valleys of Strouma and Mesta. – III, 34, 37, 95

6230 Species-rich *Nardus* grasslands on siliceous substrate in mountain areas (and submountain areas in Continental Europe) – 35.1, 35.31 – Mountain grasslands with Mat-grass in all high mountains – the Rila, Vitosha, Pirin, Ossogovo, Belassitza, Rhodope, Balkan, Slavyanka Mountains, Sredna Gora and others. – II, 5, 11, 34, 35, 36, 46, 80, 105, 106, 407

6240 Sub-pannonic steppic grasslands - 34.315 – These are the perennial calciphile communities of tussock cereals and semi-scrubs occurring on stony slopes in the Danube Plain and Dobroudja. – III, 5, 11, 34, 35, 36, 46, 80, 88

6250 Pannonic loess steppic grasslands – 34.91 – Primary steppic vegetation on loess soils in the Danube Plain – in the regions of Pleven, Vratza, Vidin, Montana and Veliko Turnovo. – III, 34

## **Semi natural tall-herb humid meadows**

6410 Molinia meadows on calcareous, peaty or clavey-silt-laden soils (*Molinion coeruleaea*) – 37.31 – Marsh communities of Bent-grass and *Deschampsia* in lowerings and close to peatlands in the Vitosha, Rila, Balkan, Rhodope, Pirin Mountains and others. – III, 34, 35, 106

6420 Mediterranean tall humid herb grasslands of the *Molinio-Holoschoenion* – 37.4  
Hygrophytic communities along the Black Sea Coast – marshy grasslands near lakes  
and lagoons - III

6430 Hydrophilous tall herb fringe communities of plain and mountain to alpine  
levels – 37.7 и 37.8 – Altiherbosa hygrophytic communities on the banks of rivers  
and streams. – 34, 104, 105, 106, 107

37.7 *Glechometalia hederaceae* and *Convolvuletalia sepium* – Strips of highsteam  
vegetation along river banks in the lower parts of mountains III

37.8 – *Betulo-Adenostiletea* – Strips of highsteam vegetation along streams and  
rivers in the higher parts of mountains - II

6440 Alluvial meadows of river valleys of the *Cnidion dubii* – 37.23 – Strips of  
hygrophytic vegetation in river valleys in plains III

## **Mesophile grasslands**

6510 Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) – 38.2 –  
Mesophile meadows in the lower parts of the country – They are rarely met, mainly in  
valleys – the Sofia valley (Bogrov and others), the regions of Samokov (Palakariya),  
Kjustendil, Pernik, Plovdiv (Graf Ignatievo and others), Svishtov (Studena Reka), the  
valley of Straldja, Gragoman and Aldomirovtzi, along the Beli Lom River in the  
regions of Razgrad, Rousse and Turgovishte, as well as in the regions of Vidin and  
Belogradchik. II or III 1, 4, 27, 29, 34, 40, 42, 43, 46, 48, 49, 50, 59, 65, 75, 76, 77,  
92, 98, 99, 100, 101

6520 Mountain hay meadows – 38.31 – Mountain mesophile hay meadows in the  
Vitosha, Rila, Pirin, Western Middle Rhodope Mountains, and in the Western and  
Middle Balkan Mountains – II or III, 34

## Raised bogs and mires and fens

### Sphagnum acid bogs

7140 Transition mires and quaking bogs – 54.5 Peatlands in the Vitosha, Rila, Western Balkan Mountains, and in the Western and Middle Rhodope Mountains – II, 89, 104, 106, 107

### Calcareous fens

7210 Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* – 53.3 – Communities of *Codium mariscus* on salty soils in Sadovo, in Yassen village (the region of Yambol), and in the periphery of marshes along the Black Sea Coast. - III

7220 Petrifying springs with tufa formation (*Cratoneurion*) – 54.12 – They occur in the whole country, sometimes on cavernous limestones, for example on the Devetashko Plateau, and others. These are small hard water springs, with dominating communities of “brown mosses”. III, 84

7230 Alkaline fens – 54.2 Calcareous peatlands and fens – II, in the Southern Pirin Mountain.

## Rocky habitats and caves

### Scree

8110 Siliceous scree of the montane to snow level (*Androsacetalia alpinae* and *Galeopsetalia ladanae*) – 61.1 Siliceous screes in the alpine and sub-alpine areas of high mountains – in the Vitosha, Rila, Middle Balkan Mountains and others. – II or III

8120 Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietalia rotundifoliae*) – 62.2 – Calcareous screes in the alpine and sub-alpine areas of high mountains – in the Pirin and Balkan Mountains (Kozyata Stena and others) – II or III

## **Rock slopes with chasmophytic vegetation**

8210 Calcareous rocky slope with chasmophytic vegetation – 62.1 – (62.15, 62.1B)

Calcareous rocks and rocky slopes in mountains and in lower parts of the country – in the Fore-Balkan Mountain, Roussenski Lom, mountains and highlands in the regions of Znepole, Nikopol, the Vrachanska Mountain, Eastern Balkan Mountain, Rhodope fore-mountains and others. – III, 16,17,88

8220 Siliceous rocky slope with chasmophytic vegetation – 62.2 Siliceous rocks and siliceous slopes in all mountains and hilly plains in Bulgaria – in the Rila, Belassitza, Balkan and Rhodope Mountains (mainly in the Eastern Rhodopes), in the Plovdiv Hills, the basalt hills in the region of Svishtov and Suhindol, the Strandja and Sakar Mountains, and others. - III

8230 Siliceous rock with pioneer vegetation of the *Sedo-Scleranthion* or of the *Sedo albi-Veronicion dillenii* – 62.42 – A habitat much related to the above one and occurring in the same areas. III

8240 Limestone pavements – 62.3 – A habitat much related to habitat 8210 and occurring in the same areas. – III, 16,17,88

## **Other rocky habitats**

8310 Caves not open to the public – 65 – Caves all over the country. - I

8330 Submerged or particulary submerged sea caves – 12.7, 11.26, 11.294 – Caves along the Black Sea Coast – Taukliman, Kaliakra, Tjulenovo, cape Maslen, Rezovo, Kastrich. – III

# Forests

## Forests of temperate Europe

9110 Luzulo-Fagetum beech forests – 41.12 Mountain beech forests on acid soils, with almost no grass storey – in the Rila, Vitosha, Belassitza, Sredna Gora, Ossogovo, Balkan, Rhodope Mountains and others. – II or III, 8,32,39,68,71,85,105,106,107

9130 Asperulo-Fagetum beech forests – 41.13 Mountain beech forests on neutral soils, with a richer grass storey including nemoral mesophytes– in the Rila, Pirin, Vitosha, Belassitza, Ossogovo, Sredna Gora, Balkan, Rhodope Mountains and others. - II or III 8,32,39,68,71,85,105,106,107

9140 Medio-European subalpine beech woods with Acer and Rumex arifolius – 41.15 Subalpine beech woods probably occurring on small areas in all mountains, near the upper forest border. - II or III, 8, 32, 39, 68, 71, 85, 105, 106,107

9150 Medio-European limestone beech forests of the Cephalanthero-Fagion – 41.16 Mountain beech forests on limestone soils with marked xerophytic, occurring in the Balkan and Slavyanka Mountains. - II or III, 8, 32, 39, 68, 71, 85, 105, 106, 107

9170 Galio-Carpinetum oak hornbeam forests – 41.261 Hornbeam and Durmast Oak forests of the Durmast Oak belt in all Bulgarian Mountains – the Rila, Pirin, Vitosha, Sredna Gora, Rhodope, Balkan, Belassitza, Ossogovo Mountains and others. – I, 8,32,85,105,106,107

9180 Tilio-Acerion forests of slopes, screes and ravines 41.4 Forests on mainly limestone slopes, in all mountains and fore-mountains – the Balkan, Fore-Balkan, Rila, Vitosha, Rhodope and Belassitza Mountains. - II or III , 8, 32, 85, 105, 106, 107

91D0 Bog woodland 44.A1 to 44.A4 – Tree vegetation in the periphery of peatlands in all mountains, in case they occur in the tree area – the Vitosha, Rila, Rhodope Mountains and others. – I or II, 8

91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior, Alno-Padion, Alnion incanae, Salicion albae – 44.3, 44.2 and 44.13 – Dense and riparian floodplain

forests dominated by Willow, Poplar, Ash, Alder – along the Danube and on the Danube islands, along Iskar, Vit, Tundja, Kamchiya, Ropotamo, Batova Rivers and many others. – II, 8,62,71,73,81,85,86,102

91F0 Riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Ulmus minor*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ulmion minoris*) – 44.4 – Drier riparian forests including mostly Common and Pedunculate Oak – the so called “Ormani” and “Eliy” – on the Vardim Island, “Genchov orman”, in the region of Levski, the villages of Gradishte, Bozhuritzha, Batzova Mahala, Tranchovitza (in the region of Pleven), Aytoska and Tulovska Grove, Starozagorsko Plain, Bezdovitza village (in the region of Dobrich). – II, 8,17,85,86

91G0 Pannonic woods with *Quercus petraea* and *Carpinus betulus* – 41.2B, 41.266, 41.267 – Mesophile forests mostly in gorges and plains in the flat country – in the Ludogorie region, Roussenski Lom, the Fore-Balkan (in the region of Lovech, Pleven (Kaylaka)), Turgovishte and also in other regions in Northern Bulgaria. II

91H0 Pannonian woods with *Quercus pubescens* – 41.7374 – Xerothermal forests on the slopes and ridges of limestone heights and gorges in the Fore-Balkan, the Danube Plain (in the region of Pleven and Nikopol), the Ludogorie region. – II, 8,85,86

91I0 Euro-Siberian steppic woods with *Quercus* spp. – 41.7A – Xerothermal oak forests of *Quercus cerris*, and of *Q. cerris* and *Q. frainetto* in the plains of Northern Bulgaria – in the regions of Vidin, Montana, Vratza, Pleven, Turnovo, Rousse and Ludogorie. Probably the forests in the Stara Zagora Plain also fall in this category. – II, 88,33,62,67,85,86

## **Mediterranean deciduous forests**

9260 *Castanea sativa* woods – 41.9 – Sweet Chestnut communities occurring in the regions of Berkovitza, Belassitza, Slavyanka and the village of Brezhani. I, 8,61

9270 Hellenic beech forest with *Abies borisi-regii* – 41.1 Mixed Fir-Beech forests in the Rila and Rhodope Mountains and more rarely in the Pirin, Slavyanka and Belassitza Mountains. – III, 8,2

9280 *Quercus frainetto* woods – 41.1B, 41.19, 41.A1 Forests of *Quercus frainetto*, *Q. cerris* and *Fagus moesiaca* in the Fore-Balkan, Ludogorie and Eastern Balkan Mountains. – II, 8,17,18,69,70,85,86

92A0 *Salix alba* and *Populus alba* galleries – 44.141, 44.6 Riparian willow and poplar galleries along the Strouma and Mesta Rivers and in the Eastern Rhodopes. – II, 8

92C0 *Platanus orientalis* and *Liquidambar* woods – 44.71 и 44.72 – Plane forests along the Strouma, Mesta, Chaya and Arda Rivers. – II, 8

### **Temperate mountain coniferous forests**

9410 Acidophilous *Picea* forests of the montane to alpine levels (*Vaccino-Piceetea*) – 42.21 to 42.23 – All Spruce forests in the mountains – the Rila, Pirin, Rhodope and Balkan Mountains. – I, 8, 53,66,85,97,105,106,107

### **Mediterranean and Macaronesian mountainous coniferous forests**

9530 (Sub) Mediterranean pine forests with endemic black pines – 42.61 to 42.66 - 8,13,25,26,66,85

42.66 Palla's pine forests – All natural forests of Austrian Pine in the Western and Middle Balkan Mountains, in the region of Znepole, Western Border Mountains, the Slavyanka, Pirin, Rila and Rhodope Mountains. I

9560 Endemic forests with *Juniperus spp.* – 42.A3 – Grecian juniper woods (*Juniperetum excelsae*) – Forests of Tree-Juniper in the Kresna Gorge and near Krichim and Assenovgrad. II

## References

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