Draft Pre-scoping Document for the Natura 2000 Seminar at the Continental, Pannonian, Steppic and Black Sea Region

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1. Background

The new Natura 2000 Seminars at the biogeographical level aim to exchange and analyse information on measures necessary to achieving favourable conservation status of species and habitats of Community interest, with special attention to the management and coherence of the Natura 2000network. The seminars involve Member States, key user groups, NGOs and independent experts.

It is important to keep in mind that the Natura 2000 Seminars under discussion are a new process and should not be confused with the biogeographical seminars examining the Member State proposals for SCIs which started in the late 1990s.

The draft Terms of Reference for the new process of Natura 2000 seminars dated 8.4.2011 identifies a pre-scoping phase with the following preparatory work (page 3 and 4):

- *Background work to identify relevant criteria to focus further analysis and discussions (e.g. focus on species and habitats related to ecosystems that are of special importance or under particular threat for a biogeographical region, focus on the most threatened species and habitats or focus on species and habitats for which response to measures is likely, focus on habitats that provide important ecosystem services,. including in relation to climate change mitigation and adaptation, not to select species and habitats present only in one Member State or where already at favourable conservation status).*
- *Identifying the species and habitat types considered to be priorities for discussion at a seminar, using existing data from the biogeographical region and the Article 17 reporting process, also having regard to the nature sub-target of the new EU biodiversity strategy.*
- *A consultation phase with Member States, Commission and stakeholders to agree which criteria to use and to decide on the species and habitat types or clusters of species or habitat types that will finally be selected. The expert group on Natura 2000 management being the most appropriate forum for this consultation.*

NB: The "pre-scoping documents" for Natura 2000 Seminars are developed in two or three stages; at each drafting stage there will be additional information and sections. Draft versions are subsequently expanded and completed to take into account decisions by the Steering Committees of each region.

The document is targeted to serve the discussion and planning of the seminar for the Continental, Pannonian, Steppic and Black Sea regions. The 1st (draft) pre-scoping document by the ETC/BD is part of the pre-scoping phase and follows largely the approach developed for the pilot seminar at the Boreal and the seminar processes for the Atlantic, Alpine and Mediterranean and Macaronesian regions.

The 1st pre-scoping document describes the methodology to rank the habitat types and species. It covers the Continental, Pannonic, Steppic and Black Sea regions.

How to use the information of the pre-scoping document?

The pre-scoping document includes the information that the ETC/BD has collated during the preparatory phase of the Continental, Pannonian, Steppic and Black Sea region Natura 2000 seminar. It aims

1) at supporting the Member States, DG ENV and the involved stakeholders to make decisions on the habitat types and species to be covered in the Continental, Pannonian, Steppic and Black Sea region seminar and

2) at giving some more detailed information using Article 17 and Natura 2000 data on those habitat types and species that the Steering Committee will later on decide to select for discussion in the seminar. The latter will be in the format of background information sheets (not yet in the draft pre-scoping document) and will be included in the Seminar background document as well.

3) at promoting and addressing elements on how to use Article 17 and Natura 2000 data in the work towards improved conservation status. For example a “positive trend” is included in the tables as this could give ideas about “quick gains” (potential easy improvement of species/habitat status with management measures). This kind of information can potentially be used in later stages while working on the conservation measures.

2. General information on the Continental, Pannonian, Steppic and Black Sea Region region

The European Union has nine biogeographical regions (map 1), each with its own characteristic blend of vegetation, climate and geology. Working at the biogeographical level makes it easier to discuss conservation of species and habitat types under similar natural conditions across a suite of countries, irrespective of political and administrative boundaries.

Map 1. The biogeographical regions of the European Union

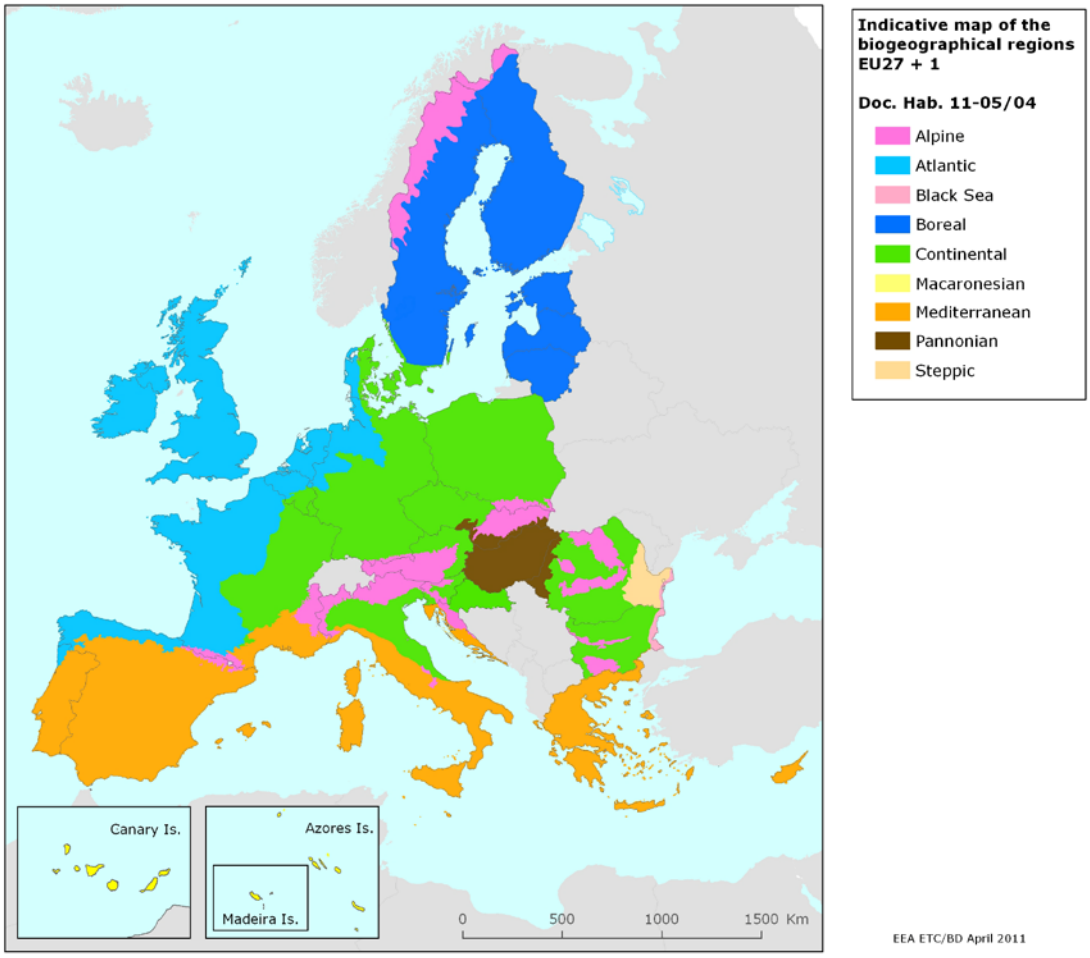
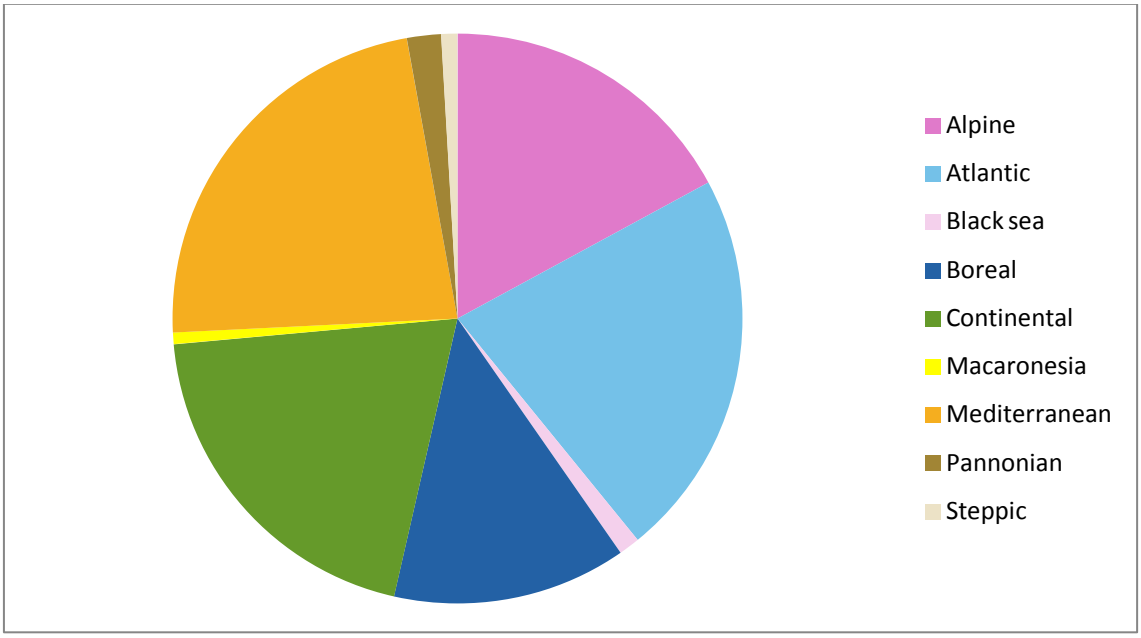


Table 1. Natura 2000 sites per biogeographical region

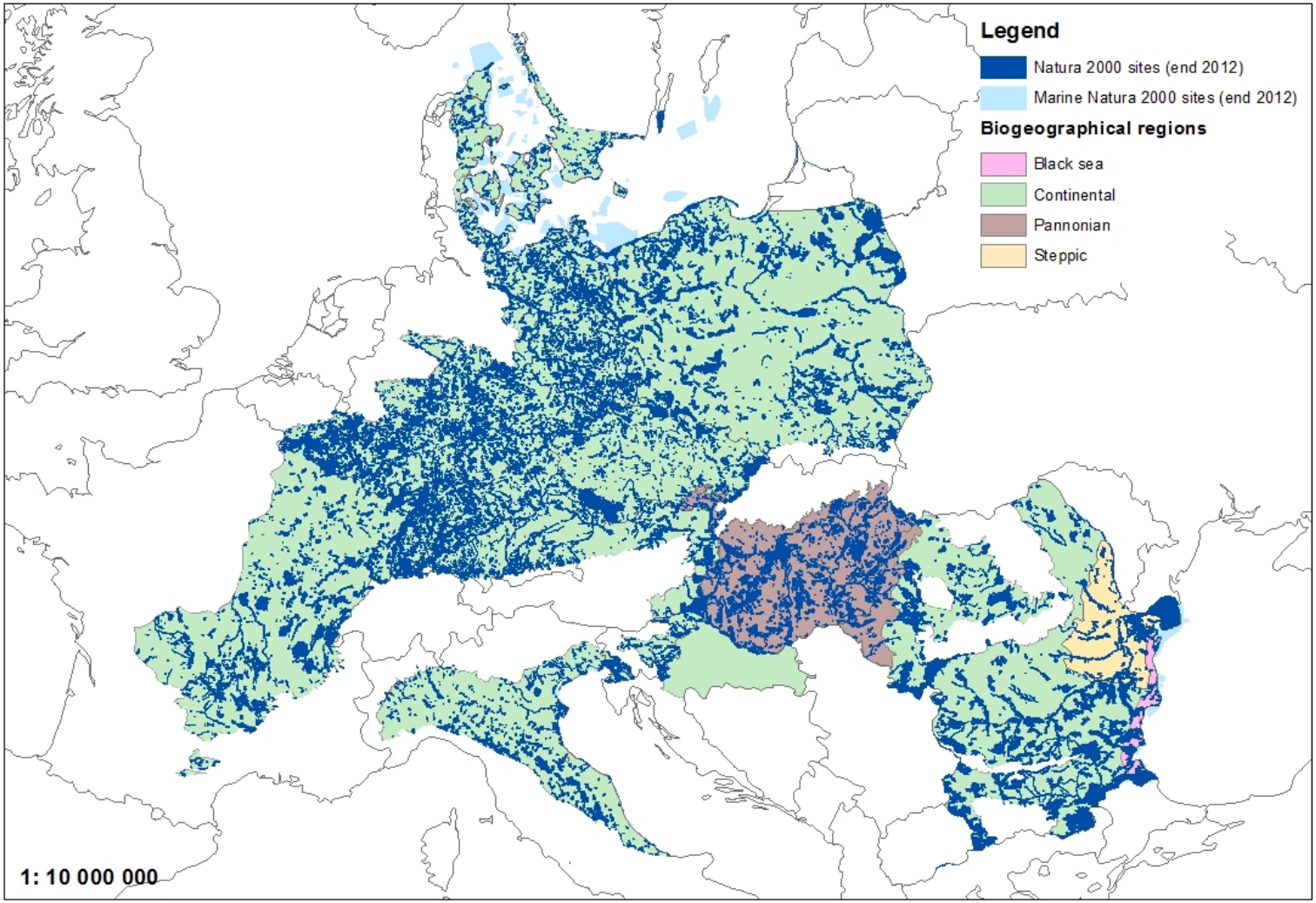
Biogeographical region	Area of Natura 2000 sites per region (km^2)	Number of sites
Alpine	149814	1599
Atlantic	193103	2812
Black sea	10475	42
Boreal	116201	6445
Continental	175147	8269
Macaronesia	5751	214
Mediterranean	200988	2991
Pannonian	16876	802
Steppic	8084	49

Source: Natura 2000 database, end 2012

Figure 1. Total area of Natura 2000 sites (%) in nine biogeographical regions (Natura 2000 database, end 2012)



Map 1. Natura 2000 sites across the Continental, Pannonian, Steppic and Black Sea region



NB Croatian Natura 2000 sites are not included on the map as Croatia joined the EU on 1.7.2013.

Continental region

The Continental region covers 24 countries and 14 of them are EU Member States: Austria, Belgium, Bulgaria, Croatia, the Czech Republic, Denmark, France, Germany, Italy, Luxembourg, Poland, Romania, Slovakia and Sweden.

The Continental region connects to most other biogeographical regions of Europe. It extends in a central-west band over most of Europe. A relatively narrow fringe of land separates it from the Atlantic Ocean in the west; in the east it reaches as far as the border of Asia, just south of the Ural Mountains. It reaches Denmark and Sweden in the north, Italy and the Balkan Peninsula in the south. The region includes or borders to several European Alpine biogeographical subregions. The region is not entirely contiguous: the Alps act as a barrier, isolating the part of the region on the Apennine Peninsula. The Continental region entirely surrounds the Pannonian region as well as the Carpathian Mountains. The Czech Republic is fully within the region except for a small area in southeast. Luxembourg is wholly within the region.

- The Continental biogeographical region is the second largest biogeographical region in Europe, nearly as big as the Boreal region
- The climate is continental with warm summers and cold winters, especially in the central and eastern parts
- The soils have naturally high fertility and the region is a main crop-producing area, mostly through intensive agriculture, but alternative farming is increasing
- Permanent grasslands are still widespread, but the area is decreasing due to intensification of agriculture and afforestation
- The forested area is increasing. The natural forest cover in much of the region is deciduous, but coniferous forests now dominate in several countries
- Only little remains of natural old forests. Substial areas of forests with little or no management are still found in the eastern parts. In many areas the forest condition is still seriously affected by long-range air pollution
- The urban areas are among the largest and most extensive in Europe, with a dense and increasing infrastructure leading to continuously increasing fragmentation of habitats
- A large proportion of the population lives in the vicinity of forests. Some new afforestation occurs around big cities for recreational purposes
- Most of Europe's large rivers cross the region; often they are highly regulated and the floodplains drained. Many rivers are interconnected by canals
- Wetlands have been much reduced, but some large remaining bogs and mires still occur in the central and eastern parts
- The number of indigenous species is high, but few are endemic to the region; forests and grasslands contain the largest number of species
- All big carnivores exist in the region, which also hosts a reconstituted population of the largest wild European herbivore, the bison
- This is a most important region for birds, including migratory species

Source: EEA (2003) Europe's biodiversity – biogeographical regions and seas. Biogeographical regions in Europe.

For further information on the Continental region, please see:

- European Commission (2009) *Natura 2000 in the Continental region* (characteristics of the region, number of Annex I habitat types and Annex II species compared to other biogeographical regions etc) http://ec.europa.eu/environment/nature/info/pubs/docs/biogeos/Continental.pdf
- EEA (2003) Europe's biodiversity – biogeographical regions and seas. Biogeographical regions in Europe. The Continental biogeographical region – agriculture, fragmentation and big rivers. http://www.eea.europa.eu/publications/report_2002_0524_154909/biogeographical-regions-in-europe/continental_biogeografical_region.pdf

Pannonian region

The Pannonian region is completely surrounded by mountains. It is enclosed by the Alps in the west and the Dinarics in the south. The Carpathians encircle the north and east. As regards the main features of relief, alluvial plains dominate with sparse isolated low hills in the interior and low mountain ranges along the boundaries. The main feature of the region is the Great Hungarian plain. Other plains include the Danube plain in Slovakia. The hilly landscape west of the Danube includes several small mountain ranges as the Bakony and Mecsek hills in Hungary and Fruska Gora hills in Serbia, Papuk. The northern rim is composed of volcanic mountains (Berecse, Pilis, Cserhát, Bukk and Zemplin hills). The fluvial network is an important feature of the region. The Danube which flows from north to south has numerous tributaries. The Pannonian region is very rich in underground water.

Four EU member states are concerned by the Pannonian region, namely the Czech Republic, Hungaria, Romania and Slovakia.

- The Pannonian region is dominated by the Great Hungarian Plain.
- Former extensive forests are replaced by grasslands and steppes. Sandy grasslands, i. e. the Hungarian Puszta, is now the dominating type of habitat.
- Agriculture, drainage, eutrophication and salinisation are major threats to biodiversity.
- River regulation and effluents in river are imposing threats to biodiversity in water bodies.
- A few large lakes are heavily influenced by eutrophication and tourist activities.

Source: EEA (2003) Europe's biodiversity – biogeographical regions and seas. Biogeographical regions in Europe.

For further information on the Pannonian region, please see:

- European Commission (2005) *Natura 2000 in the Pannonian region* (characteristics of the region, number of Annex I habitat types and Annex II species compared to other biogeographical regions etc) http://ec.europa.eu/environment/nature/info/pubs/docs/biogeos/pannonian.pdf
- EEA (2003) Europe's biodiversity – biogeographical regions and seas. Biogeographical regions in Europe. The Pannonian region – the remains of the Pannonian Sea. http://www.eea.europa.eu/publications/report_2002_0524_154909/biogeographical-regions-in-europe/pannonian.pdf

Steppic region

The Steppic region stretches from Bucharest in the west, across the lower section of the floodplain of the Danube, along the north of the Black Sea and the foothills of the Caucasus. It is bordered in the east by the northwest coast of the Caspian Sea and the Ural River. Its boundary in the north is the beginning of the wooded steppe, which is part of the Continental region. It represents the European part of the steppes, a continuous band as far as to the Altai mountains on the borders of Mongolia. Only Romania shares this region in the EU territory.

- Vast steppic areas with a tree-less vegetation dominated by *Stipa* and other turf grasses growing on black soils
- Heavily influenced by human activities as conversion of the steppe into arable land, regulation of waterways, constructions of dams, salinisation and pollution from mining activities
- The Volga delta offers breeding grounds for many birds species
- Uncontrolled use of biological resources has diminished animal populations, several species are listed as vulnerable or endangered, among them sturgeons

Source: EEA (2003) Europe's biodiversity – biogeographical regions and seas. Biogeographical regions in Europe.

For further information on the Steppic region, please see:

- European Commission (2009) *Natura 2000 in the Steppic region* (characteristics of the region, number of Annex I habitat types and Annex II species compared to other biogeographical regions etc) http://ec.europa.eu/environment/nature/info/pubs/docs/biogeos/Steppic.pdf
- EEA (2003) Europe's biodiversity – biogeographical regions and seas. Biogeographical regions in Europe. The Steppic region – the plains of Europe.

  http://www.eea.europa.eu/publications/report_2002_0524_154909/biogeographical-regions-in-europe/steppic.pdf

Black Sea Region

Most of the Black Sea region can be found in Turkey and from the EU countries only Romania and Bulgaria share this region.

The region consists of two coastal bands encompassing the southern half of the Black Sea. The western part stretches from the delta of the Danube, through the Dobrouja plateau, across low mountains extending east towards the Bosphorus outlet – 1 400 km long and between 10 and 160 km wide – stretches from east of the Bosphorus over the various mountain ranges along the southern coast of the Black Sea and as far the Caucasus mountains in the east.

- This chapter covers southern shore areas of the Black Sea.
- Climatic transfer from Mediterranean to continental Europe.
- Costal cliffs and the Danube delta hosts a highly diverse fauna.
- Originally mostly covered by forests.
- Agriculture, afforestation, salinisation and coastal erosion are major threats to the biodiversity in region.

Source: EEA (2003) Europe's biodiversity – biogeographical regions and seas. Biogeographical regions in Europe.

For further information on the Black Sea region, please see:

- European Commission (2009) *Natura 2000 in the Black Sea region* (characteristics of the region, number of Annex I habitat types and Annex II species compared to other biogeographical regions etc) http://ec.europa.eu/environment/nature/info/pubs/docs/biogeos/Black%20Sea.pdf
- EEA (2003) Europe's biodiversity – biogeographical regions and seas. Biogeographical regions in Europe. The Black Sea region – shores and delta http://www.eea.europa.eu/publications/report_2002_0524_154909/regional-seas-around-europe/BlackSea.pdf

General:
Natura 2000 Barometer provides figures for the global Natura 2000 sites (SPAs+ SCIs) which have been obtained by GIS analysis, using the electronic spatial boundaries provided by Member States for each of their sites. It is regularly updated in Natura 2000 Newsletter:
http://ec.europa.eu/environment/nature/info/pubs/natura2000nl_en.htm

3. The Article 17 (conservation status) reporting

All Member States are required by the Habitats Directive to monitor habitat types and species of Community interest. Article 17 of the Directive requires that every 6 years Member States prepare reports to be sent to the European Commission on the implementation of the Directive. The Article 17 report for the period 2001-2006 is the first reporting period that includes assessments on the conservation status of the habitat types and species of Community interest. The Article 17 reports (http://bd.eionet.europa.eu/article17) cover the habitat types and species across the whole territory of the Member State concerned, not only within Natura 2000 sites.

The Article 17 reports prepared by the Member States have three sections; (i) general information about the implementation of the Habitats Directive, (ii) the assessments of conservation status of species and (iii) for habitats. Conservation status was assessed using a standard methodology to facilitate comparisons between Member States and to allow aggregation to give assessments for biogeographical regions. Conservation status is assessed as being either 'favourable' (FV), 'unfavourable-inadequate' (U1) and 'unfavourable-bad' (U2), based on four parameters as defined in Article 1 of the Directive.

The parameters for habitat types are 'range', 'area covered by the habitat type', 'structure and functions' and 'future prospects' and for species they are 'range', 'population', 'habitat of species' and 'future prospects'. Member States were encouraged to use expert opinions where there was insufficient data to inform judgements. However, where there was great uncertainty it was also possible to report the conservation status as 'unknown'. The assessments of the four parameters were combined following an agreed method to give an overall assessment of conservation status. The conservation status is assessed separately for each of the biogeographical region occurring in a Member State.

The current reporting period covers the period of 2007-2012. Lessons from the first assessment period have been learnt and taken into account as much as possible and a revised reporting format and guidance document were made available in 2011. The harmonisation process will continue after 2013.

Conservation status of habitat types and species per habitat group in the Continental and Pannonian region

Figure 2 and 3 show the percentages of overall assessments of habitat types and species in each class for habitat groups in the Continental and Pannonian region (see more about the habitat groups on page 18). Steppic and Black Sea regions are not covered as these regions were not yet part of the reporting exercise in 2007. The number in brackets shows the number of assessments in each group. The statistics are based on the Member State level biogeographical assessments of conservation status. All habitat types and Annex II and IV species are used in the graph. More details on listing habitats and species in habitats groups can be found in the Appendix 1 and 2. Some of the habitats or species can be listed in two habitat groups.

Figure 2. Conservation status of habitat types and species per habitat group in the Continental region (number of assessments in brackets). Overall assessments at MS level.

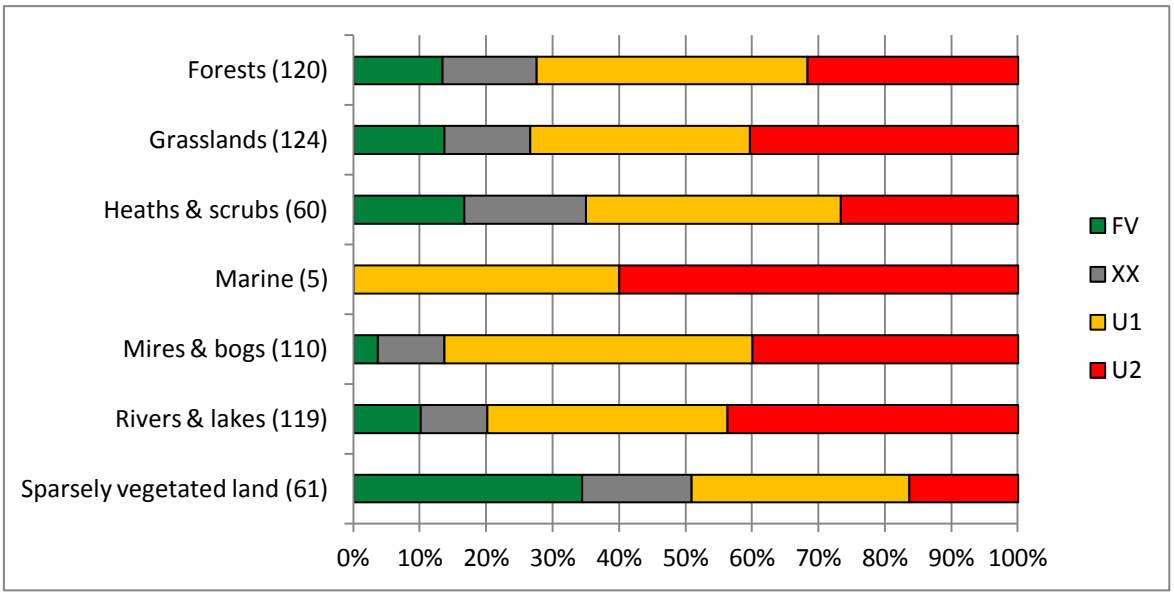
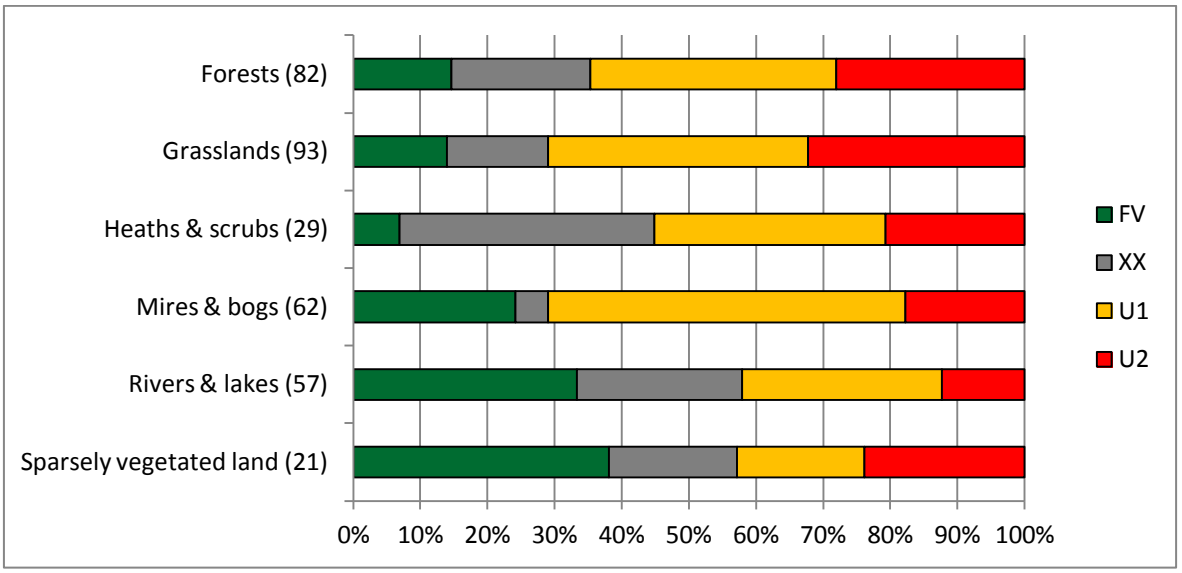
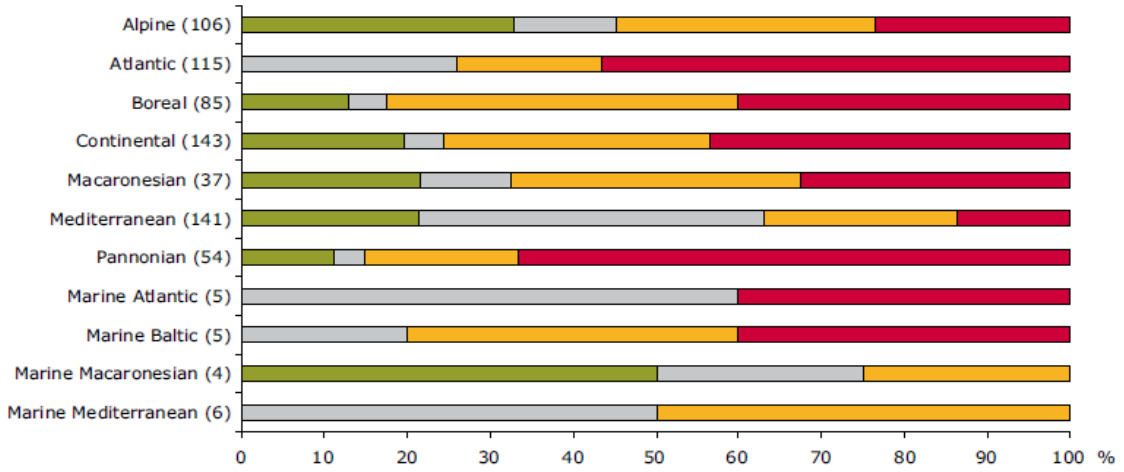


Figure 3. Conservation status of habitat types and species per habitat group in the Pannonian region (number of assessments in brackets). Overall assessments at MS level.



To compare the conservation status of the habitat types and species between different biogeographical and marine regions, please see the Figure 4 and 5 (taken from the EEA Technical report on EU 2010 Biodiversity Baseline).

Figure 4. Conservation status of habitat types per biogeographical and marine region.

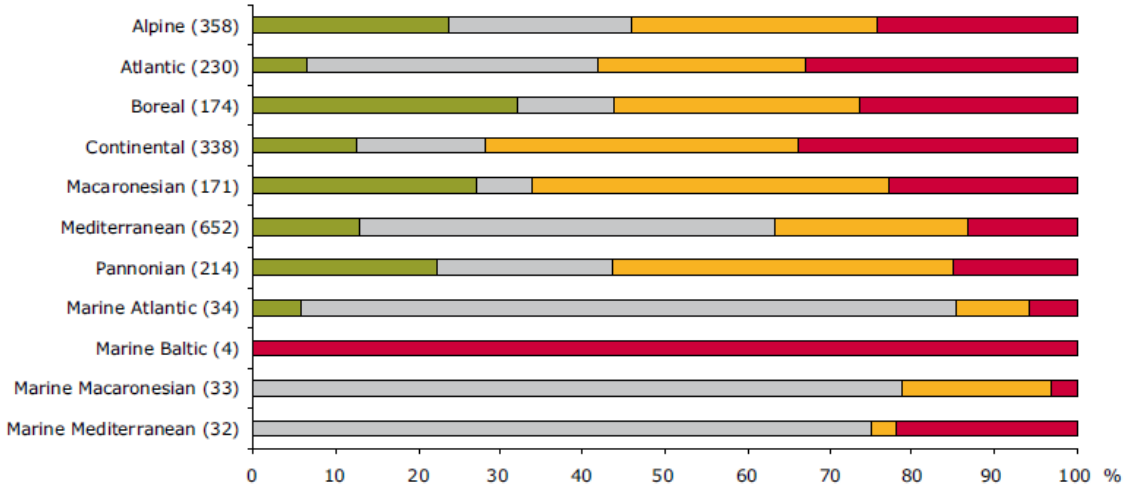


- The proportion of the habitats assessed as 'unfavourable — bad' exceeds 40 % in most of the biogeographical and marine regions.
- The proportion of the habitats assessed as 'unfavourable' is more than 70 % in most of the terrestrial biogeographical regions.
- In the Atlantic and Pannonian biogeographical regions, more than 50 % of the habitats are assessed as 'unfavourable — bad'; this percentage slightly exceeds the percentage in the other biogeographical regions.

Note: Geographical coverage: EU except Bulgaria and Romania; number of assessments in brackets.

Source: ETC/BD, 2008.

Figure 5. Conservation status of species per biogeographical and marine region.



- The proportion of species assessed as 'unfavourable — bad' exceeds 20 % in most of the biogeographical regions.
- However, the highest percentage of 'unfavourable-bad' assessments is in the Continental and Atlantic regions.
- The proportion of 'favourable' assessments exceeds 20 % in the Alpine, Boreal, Macaronesian and Pannonian regions.
- The proportion of 'unknown' assessments is overwhelming in most of the marine regions indicating that gaps in knowledge are in general much higher for the marine environment than for the terrestrial environment.

Note: Geographical coverage: EU except Bulgaria and Romania; number of assessments in brackets.

Source: ETC/BD, 2008.

4. Identifying habitat types & species for the Continental, Pannonian, Steppic and Black Sea Seminar – preparatory work

This chapter summarises the work provided by the ETC/BD to help the Steering Committee in narrowing down the selection of habitat types and species during the preparatory stage of the Continental, Pannonian, Steppic and Black Sea Natura 2000 Seminar. The methodology and ranking of species and habitat types is described below.

4.1 *Data and method used for the analysis & ranking of species and habitat types and habitat groups*

4.1.1 Data used

One of the aims of the new process of the Natura 2000 seminars at biogeographical level is to assess and discuss how the management of the Natura 2000 network can best contribute to the improvement of the conservation status of the targeted species and habitat types (and status of birds). This is why the main source of information for the identification of the criteria is the Article 17 reports (http://bd.eionet.europa.eu/article17) (see also chapter 3). In addition, there are practical reasons for this choice: this information is easily accessible and it is the most recent data at the European level (covering period 2001-2006, EU25 species listed in the Annex II, IV and V and habitat types of Annex I of the Habitats Directive). Please notice that data from Article 17 reports of 2007-2012 reporting round were not yet used as the data quality checking is not yet finalised (due to delays of the Member States' deliveries). Bird species are not covered in the ETC/BD analysis, but birds are part of the Natura 2000 seminars.

Bulgaria and Romania were not yet part of the previous Art 17 reporting round, however these two Member States are taken into account in the calculations for the Continental region and Romania for the Pannonian region as they were having 'unknown' status in the analysis to ease their involvement in the selection of the habitat types for these regions. In addition a table has been provided in Appendix 3 to list species and habitat types which occur only in Romanian and Bulgarian parts of the Continental and Black Sea region or the Pannonian or Steppic regions of Romania. However, Croatia has not been taken into account in calculations due to their recent accession to the EU.

The Article 17 data from the Member State level were used in this proposal as the potential measures deriving from this process would be taken at the national level. The Article 17 data quality issues are not repeated here as they are discussed in details in the Article 17 Technical report http://bd.eionet.europa.eu/article17/chapter2.

4.1.2 Methods used

For all calculations concerning the species and habitat types listed in the Annex I, II and IV of the Habitats Directive, the Article 17 reporting data of 2001-2006 are used. Annex V species are excluded following the approach of the Pilot Boreal, the Atlantic and Alpine and the Mediterranean and Macaronesian processes. In addition, species and habitat types occurring only in one Member States are excluded from the calculations (following the same approach as in the other seminar processes).

Continental region

There are 157 habitat types listed for the Continental region in Annex I of the Habitats Directive (this work covers 143 habitats).

In total 371 Annex II and IV species of the Continental region are listed in the Habitats Directive and 62 of these species occur only in Bulgaria and Romania (this work covers 221 species).

Pannonian region

There are 56 habitat types listed for the Pannonian region in Annex I of the Habitats Directive (this work covers 54 habitats).

In total 196 Annex II and IV species of the Pannonian region are listed in the Habitats Directive (151 species are covered in this work).

Steppic & Black Sea region (these regions are not part of the ranking, see Appendix 3)

There are 25 habitat types listed for the Steppic region in Annex I of the Habitats Directive. In total 86 Annex II and IV species of the Steppic region are listed in the Habitats Directive.

There are 55 habitat types listed for the Black Sea region in Annex I of the Habitats Directive. In total 91 Annex II and IV species of the Black Sea region are listed in the Habitats Directive.

Criteria for prioritisation (Criterion A, B and C)

Given the need to focus on a limited number of issues in the seminar the priority for discussions of habitat types and species was assessed and ranked. Identifying priorities should reflect on one side the conservation 'urgency/priority' (unfavourable conservation status and declining trends) and on the other side joint interest of all Member States involved in the seminar (the priority should be given to habitat types and species which occur in most of the countries in the region).

The following criteria based on the Article 17 reporting are proposed to be used for the first step to narrow down the selection of species and habitat types (criteria for prioritisation). There are three criteria A, B and C. This work was developed for the Pilot Seminar.

***Criterion A**. Number of MS where species/habitat types are present*

The proposal is to give a higher weight to species and habitat types which occur in several Member States. Habitat types and species only occurring in one Member State of the biogeographical region or habitat type and species that just have some outliers in the region from e.g. the Continental region are less important to discuss in such a setting than the habitat types and species that are shared by many Member States in the same region and with their main distribution there. As explained above, species and habitat types occurring in one Member State of the Continental (or the Pannonian) region only are left out from the analysis.

If for example a species in Continental region is only present in two Member State it scores only 2 points, but if it is present in all 13 Continental Member States it scores 13 points (as Croatia not part of the calculations). Criterion A has a multiplier effect as shown

below under the paragraph 'Filtering the species and habitat types based on criteria A, B and C.

***Criterion B**. Species and habitat types at unfavourable conservation status (U2 & U1 & XX*)

The terms of reference for the biogeographical seminars excludes from the discussion species and habitats already at favourable conservation status. This is why species and habitats with favourable conservation status are not taken into account under criterion B. Species and habitats are allocated a score based on their conservation status in each Member State in the following way:

The habitat/species scores

- 2 points for each Member State in which it has been assessed as Unfavourable-Bad (U2) and
- 1 point if Unfavourable-Inadequate (U1) or Unknown (XX).

and these scores summed up give the overall score.

For example the Semi-natural dry grasslands 6210 in Pannonian region was assessed as follows

$$B = 2(N°U2) + N°XX = 2*2 + 1*1 = 5$$

- B = score for criterion B
- N°U2, N°U1, N°XX = number of Member States with the conclusion U2, U1, XX.

Member State	Article 17 evaluation	Score
CZ	U2	2
HU	U2	2
SK	XX	1
Overall score		5

This criterion reflects the importance to agree on management for habitat types and species that are far from being at favourable conservation status compared to those ones which are close to favourable status. The higher is the number of Member States with unfavourable conclusions the higher the score. This method works with absolute numbers, it is not sensitive to the percentage of the habitat area or species population having an unfavourable status. For example if the conclusion in two out four Member States is U2 the species has 4 points (considering it is favourable in remaining two Member States). But the species scores 4 points also if the species occur only in two Member States and both have reported U2 conservation status.

On the other hand the score is dependent on the number of Member States where the habitat/or species occurs. The habitats/species present in several Member States have higher probability to get high scores.

***Criterion C.** Trend information*

All species and habitat types that were reported as having a negative trend in the Article 17 reports are taken into account using the following parameters:

Feature	Trend
Species	"Population"
	"Habitat for the species"
Habitat types	"Area of the habitat type"
	Qualifier for "Structure & functions"

Ideally, the qualifier information (U1-, U2-) could have been used under the parameter "Structure and functions", however as qualifiers are not used systematically, it is not used under this criteria for the analysis of the Continental and the Pannonian region.

For these parameters each negative trend information (scoring 1) is counted per species or habitat type.

If both parameters for a species are negative in 13 Member States, the score would be 26 points.

$$C = N° \text{ trend1} + N° \text{ trend2}$$

- C = score for criterion C
- N° trend1, N° trend2 = number of Member States where the trend1, trend2 is negative

NB: For the Boreal region (Pilot seminar) the qualifier information for structure and functions (U1-, U2-) was used to support this criterion as this information was available from the Boreal Member States. Information on structure and function is closely linked to potential management needs, so its use can be justified in this context.

It is expected that in the current reporting round the Member States have used the qualifier in a more systematic way and the information could be used for the future seminars.

Filtering the species and habitat types based on criteria A, B and C and use of the Priority Index

After the scores are given to each habitat type and species according to the criteria A, B and C, the scores are then used to calculate a Priority Index for each species and habitat type. The algorithm for calculation should be understandable and simple and the Steering Committees for the Boreal, Atlantic and Alpine regions agreed to use the sum of scores for unfavourable conservation status and negative trend multiplied by the number of countries where habitat/species is present: A*(B+C).

The other options for the algorithm are described in the draft pre-scoping document for the Boreal region by the ETC/BD:

https://circabc.europa.eu/w/browse/b9886a98-1fe2-40f1-a759-053c62748d6c

Criteria for clustering habitats and species

The first discussions in 2011 on the new Natura 2000 seminars at biogeographical level identified a need to cluster the habitats and species into broader ecosystems. The original clustering of habitat types and species developed by the EEA and the ETC/BD for the EU

2010 Biodiversity Baseline[1] has been used as a basis to group species and habitat types under broad habitat groups for the Boreal, Atlantic and Alpine seminar processes as this was the most recent available grouping covering all Member States and relatively easy to be adjusted for the purposes of these seminars.

In this earlier background work all species and habitat types are allocated to at least one of the thirteen habitat groups (forests, freshwater, wetlands, grasslands, agro-ecosystems, rocks etc). The ETC adjusted the habitat groups to better reflect the ecological conditions of each region (see e.g. the pre-scoping document for the Atlantic region https://circabc.europa.eu/w/browse/b9886a98-1fe2-40f1-a759-053c62748d6c).

However, the on-going MAES[2] process is working on the new typology of ecosystems for mapping and assessment and the ETC/BD is taking this into account in the work for the Continental and Pannonian region (in practise no big difference to the work done so far for the other biogegraphical regions and the MAES typology was already taken into account in the Mediterranean and Macaronesian pre-scoping document). See the table below.

MAES typology of ecosystems		Naming used in pre-scoping work by ETC/BD
Major ecosystem category (level 1)	Ecosystem type for mapping & assessment (level 2)	
Terrestrial	Urban	-
	Cropland	-
	Grassland	Yes
	Woodland and forest	Yes, but we call it 'Forests'
	Heathland and scrub	Yes, but we call it 'Heaths & scrubs'
	Sparsely vegetated land	Yes (means rock and ice)
	Inland wetlands	Yes, but we call it 'Mires and bogs'
	Coastal	Yes, although MAES work not completed yet
Freshwater	Rivers and lakes	Yes
Marine		Yes, although MAES work not completed yet

For the ETC/BD analysis the habitat types and species from Art 17 data are grouped under one habitat group only wherever possible and limited to maximum of two habitat groups[3][4] and Annex V species are excluded (as for the other biogeographical regions).

[1] The EU 2010 Biodiversity Baseline provides facts and figures on the state and trends of the different biodiversity and ecosystem components and supports the EU in developing the post-2010 sub-targets and provides factual data for measuring and monitoring progress in the EU from 2011 to 2020 (http://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline)

[2] Mapping and Assessment of Ecosystems and their Services.

[3] Please notice that some Annex II/IV species may be missing under relevant habitat group, but normally Member States should be able to pick them up during the process, at latest when habitats and species are selected under discussion.

NB: For some species e.g. bats the clustering may be too narrow, because breeding, foraging, resting and wintering habitat can cover more than two habitats.

As a result, the ETC/BD proposes to use eight habitat groups and habitat types and species are attributed to these groups using Article 17 checklist and ETC/BD expert opinion:

Forests, Grasslands, Coastal, Heaths & scrubs, Lakes and rivers, Mires & bogs, Sparsely vegetated land and Marine

Using the Priority Index to rank habitat groups

To finalise the ranking of different habitat groups, for each group of habitat type and species the cumulative Priority Index was calculated by summing up the index of each habitat and species and then divided it with the number of habitats and species in the group.

We can use the 'Rivers and lakes' group in table 2 as an example for how the Priority Index was calculated. First we use the algorithm A*(B + C). Each species and habitat types linked to 'Rivers and lakes' gets a figure (index) by using this agreed formula. The figures are summed up and divided by the number of species/habitats of listed under 'Rivers and lakes' giving the cumulative Priority Index 80,7 for this habitat group.

4.2. Results – Continental region

Ranking of the habitats and species under six habitat groups

Ranking of the six habitat groups is shown in table 2. The results of this analysis give 'Mires & bogs' and 'Heaths & scrubs' the highest ranking suggesting that these habitat groups (their habitat types and species) require particular attention in the Continental region.

Table 2. The cumulative priority index in CON region using A*(B+C) and the ranking (excluding Annex I habitat types and Annex II & IV species occurring only in one MS)

Habitat group	Number of species and habitat types	A*(B+C)
Mires & bogs	84	101.8
Heaths & scrubs	30	88.6
Grasslands	80	81.8
Forests	89	81.4
Rivers & lakes	78	80.7
Sparsely vegetated land	38	71.4
Marine	5	54.8

Ranking of the habitats and species

Given the need to focus on a limited number of issues in the Natura 2000 seminar, we have used the algorithm A*(B+C) where A = number of MS, B = unfavourable conservation status and C = negative trend, to calculate a Priority Index for each habitat types and species following the steps as described above. We ranked the top 20 habitat types (habitat types with the highest Priority Index) for the Continental region (see below table 3. For legend of table 3, see Appendix 1). The results for all species and habitat types are shown in Appendix 1. Occurrence of the habitats and species in the Black Sea and Steppic region are indicated in the tables.

Table 3. Top 20 habitat types of the Continental region (several habitat types have same scores).

N2K code	Description	Prio	CON CS	Positive trends	Criterion A	Criterion B	Criterion C	A*(B+C)	Occurs in BLS	Occurs in STE
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	N	U2	0	13	22	9	403	X	X
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	N	U2	0	13	19	8	351	X	
7230	Alkaline fens	N	U2	0	13	18	8	338		
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	N	U1	0	12	18	8	312	X	X
7140	Transition mires and quaking bogs	N	U2	0	13	17	6	299		
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	N	U2	0	13	17	5	286	X	X
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	Y	U2	0	11	18	7	275		
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	N	U2	1	13	17	3	260	X	X
4030	European dry heaths	N	U2	2	10	18	6	240	X	
91F0	Riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor, Fraxinus excelsior or Fraxinus angustifolia, along the great rivers	N	U2	0	11	17	4	231	X	X

	(Ulmenion minoris)									
7220	Petrifying springs with tufa formation (Cratoneurion)	**Y**	**U2**	**0**	**13**	**14**	**3**	**221**	**X**	
5130	Juniperus communis formations on heaths or calcareous grasslands	**N**	**U2**	**1**	**12**	**14**	**4**	**216**		
3160	Natural dystrophic lakes and ponds	**N**	**U2**	**0**	**10**	**15**	**5**	**200**	**X**	**X**
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	**Y**	**U2**	**1**	**11**	**14**	**4**	**198**	**X**	
91D0	Bog woodland	**Y**	**U2**	**1**	**11**	**14**	**4**	**198**		
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	**N**	**U1**	**0**	**13**	**14**	**1**	**195**	**X**	**X**
9110	Luzulo-Fagetum beech forests	**N**	**U2**	**3**	**13**	**13**	**1**	**182**		
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	**N**	**U2**	**0**	**12**	**14**	**1**	**180**	**X**	**X**
7110	Active raised bogs	**Y**	**U2**	**0**	**9**	**15**	**4**	**171**		
7150	Depressions on peat substrates of the Rhynchosporion	**N**	**U2**	**0**	**10**	**14**	**3**	**170**		

4.3. Results - Pannonian region

Ranking of the habitats and species under eight habitat groups

Ranking of the six habitat groups is shown in table 4. The results of this analysis give ‘Grasslands’ and ‘Heaths and scrubs’ habitat groups highest scores suggesting that these habitat groups (their habitat types and species) require particular attention in the Pannonian region.

Table 4. The cumulative priority index in PAN region using A*(B+C) and the ranking (excluding Annex I habitat types and Annex II & IV species occurring only in one MS)

Habitat group	Number of species and habitat types	A*(B+C)
Grasslands	64	15.1
Heaths & scrubs	22	14.2
Mires & bogs	46	13
Rivers & lakes	44	12.3

Forests	61	11.8
Sparsely vegetated land	16	6.9

Ranking of the habitats and species

Given the need to focus on a limited number of issues in the Natura 2000 seminar, we have used the algorithm A*(B+C) where A = number of MS, B = unfavourable conservation status and C = negative trend, to calculate a Priority Index for each habitat types and species following the steps as described above. We ranked the top 22 habitat types (habitat types with the highest Priority Index) for the Pannonian region (see below table 5. For legend of table 10, see Appendix 1). The results for all species and habitat types are shown in Appendix 2. Occurrence of the habitats and species in the Black Sea and Steppic region are indicated in the tables.

Table 5. Top 22 habitat types of the Pannonian region (several habitat types have same score).

N2K code	Description	Prio	PANCS	Positive trends	Criterion A	Criterion B	Criterion C	A*(B+C)	Occurs in BLS	Occurs in STE
6260	Pannonic sand steppes	Y	U2	0	4	7	4	44	X	X
91F0	Riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor, Fraxinus excelsior or Fraxinus angustifolia, along the great rivers (Ulmenion minoris)	N	U2	0	4	7	2	36	X	X
91I0	Euro-Siberian steppic woods with Quercus spp.	Y	U2	0	4	7	2	36	X	X
6250	Pannonic loess steppic grasslands	Y	U2	0	4	6	3	36		
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	N	U2	0	4	6	2	32	X	X
6440	Alluvial meadows of river valleys of the Cnidion dubii	N	U2	0	4	6	2	32	X	X
40A0	Subcontinental peri-Pannonic scrub	Y	U2	1	4	6	2	32	X	
1530	Pannonic salt steppes and salt marshes	Y	U2	0	4	5	2	28	X	X
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	N	U2	0	4	6	1	28	X	X
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	N	U2	1	4	6	1	28	X	X
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	N	U2	0	4	6	1	28	X	X
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion	Y	U2	0	3	6	2	24	X	

	albae)									
6240	Sub-Pannonic steppic grasslands	**Y**	**U2**	**0**	**3**	**5**	**3**	**24**	**X**	
7230	Alkaline fens	**N**	**U2**	**0**	**3**	**5**	**3**	**24**		
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	**N**	**U1**	**0**	**4**	**5**	**1**	**24**	**X**	**X**
3270	Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation	**N**	**U1**	**0**	**4**	**6**	**0**	**24**	**X**	**X**
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	**N**	**U2**	**0**	**3**	**5**	**2**	**21**	**X**	
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	**N**	**U1**	**0**	**4**	**5**	**0**	**20**	**X**	**X**
9180	Tilio-Acerion forests of slopes, screes and ravines	**Y**	**U2**	**0**	**3**	**5**	**1**	**18**	**X**	
4030	European dry heaths	**N**	**U2**	**0**	**3**	**4**	**2**	**18**	**X**	
3160	Natural dystrophic lakes and ponds	**N**	**U2**	**0**	**3**	**4**	**2**	**18**	**X**	**X**
91M0	Pannonian-Balkanic turkey oak –sessile oak forests	**N**	**U2**	**0**	**3**	**4**	**2**	**18**	**X**	**X**

Appendix 1. List of species and habitats types of the Continental region

- Different colours are used for different habitat groups. Species/habitat types present in only one MS are excluded.
- H= habitat type, A = amphibian, I = invertebrate, M = mammal, P = plant, R = reptile
- **Prio** = priority habitat type or species
- **I, II and IV** refer to Annexes of the Habitats Directive.
- **CON CS** = Conservation status at the Continental region. Red = unfavourable-bad, amber = unfavourable-inadequate, grey = unknown.
- **Positive trend**: positive trend for population & habitat for species or area of the habitat were used. 0 means that there was not any positive trend reported under the used parameters.
- **Criterion A**= number of MS where species/habitat type is present, **Criterion B** = species/habitat types at U2, U1 or unknown status and **Criterion C**= negative trend and **A(B+C)** = the agreed algorithm.
- Cells in yellow highlight the data that was used for ranking the habitat types and species.

Habitat group	N2K code	Taxono-mical group	Description	Prio	I	II	IV	V	CON CS	Positive trends	Criterion A	Criterion B	Criterion C	A*(B+C)	Occur in BLS	Occur in STE
Forests	91F0	H	Riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor, Fraxinus excelsior or Fraxinus angustifolia, along the great rivers (Ulmenion minoris)	N	Y				U2	0	11	17	4	231	X	X
Forests	91E0	H	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	Y	Y				U2	1	11	14	4	198	X	
Forests	91D0	H	Bog woodland	Y	Y				U2	1	11	14	4	198		

Forests	9110	H	Luzulo-Fagetum beech forests	N	Y				U2	3	13	13	1	182		
Forests	9170	H	Galio-Carpinetum oak-hornbeam forests	N	Y				U1	1	10	14	1	150	X	
Forests	9130	H	Asperulo-Fagetum beech forests	N	Y				U1	2	12	11	1	144		
Forests	9180	H	Tilio-Acerion forests of slopes, screes and ravines	Y	Y				U1	1	12	11	0	132	X	
Forests	9160	H	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	N	Y				U1	1	9	10	1	99		
Forests	9190	H	Old acidophilous oak woods with Quercus robur on sandy plains	N	Y				U2	0	8	11	1	96		
Forests	9410	H	Acidophilous Picea forests of the montane to alpine levels (Vaccinio-Piceetea)	N	Y				U2	0	8	10	2	96		
Forests	9150	H	Medio-European limestone beech forests of the Cephalanthero-Fagion	N	Y				U1	1	10	8	0	80		
Forests	91I0	H	Euro-Siberian steppic woods with Quercus spp.	Y	Y				U2	0	5	7	2	45	X	X
Forests	9260	H	Castanea sativa woods	N	Y				U2	0	5	5	1	30		
Forests	91H0	H	Pannonian woods with Quercus pubescens	Y	Y				U2	0	5	5	1	30	X	
Forests	2180	H	Wooded dunes of the Atlantic, Continental and Boreal region	N	Y				U2	0	4	6	1	28	X	
Forests	91G0	H	Pannonic woods with Quercus petraea and Carpinus betulus	Y	Y				U2	0	4	7	0	28	X	
Forests	92A0	H	Salix alba and Populus alba galleries	N	Y				U1	0	4	5	1	24	X	X
Forests	91T0	H	Central European lichen Scots pine forests	N	Y				U1	0	3	5	1	18		

Forests	9120	H	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	N	Y				XX	0	4	4	0	16		
Forests	9530	H	(Sub-) Mediterranean pine forests with endemic black pines	Y	Y				U1	0	4	4	0	16		
Forests	91U0	H	Sarmatic steppe pine forest	N	Y				U2	0	2	3	2	10		
Forests	9140	H	Medio-European subalpine beech woods with Acer and Rumex arifolius	N	Y				U1	1	3	3	0	9		
Forests	91L0	H	Illyrian oak-hornbeam forests (Erythronio-Carpinion)	N	Y				FV	1	3	2	0	6		
Forests	9340	H	Quercus ilex and Quercus rotundifolia forests	N	Y				FV	0	2	2	0	4		
Forests	9430	H	Subalpine and montane Pinus uncinata forests (* if on gypsum or limestone)	N	Y				U1	0	2	1	0	2		
Forests	91K0	H	Illyrian Fagus sylvatica forests (Aremonio-Fagion)	N	Y				FV	1	2	1	0	2		
Forests	1084	I	Osmoderma eremita	Y		Y	Y		U2	0	11	19	8	297	X	X
Forests	1308	M	Barbastella barbastellus	N		Y	Y		U1	4	13	15	5	260	X	
Forests	1166	A	Triturus cristatus	N		Y	Y		U1	4	11	13	10	253		
Forests	1193	A	Bombina variegata	N		Y	Y		U2	0	10	13	9	220	X	
Forests	1304	M	Rhinolophus ferrumequinum	N		Y	Y		U1	3	11	15	4	209	X	X
Forests	1209	A	Rana dalmatina	N			Y		U2	5	10	9	9	180	X	
Forests	1323	M	Myotis bechsteinii	N		Y	Y		XX	2	12	12	3	180	X	
Forests	1188	A	Bombina bombina	N		Y	Y		U1	6	9	11	8	171	X	X
Forests	1341	M	Muscardinus avellanarius	N			Y		XX	2	12	8	6	168	X	
Forests	1322	M	Myotis nattereri	N			Y		U1	1	11	10	5	165		
Forests	1330	M	Myotis mystacinus	N			Y		U1	0	12	9	4	156	X	

Forests	1083	I	Lucanus cervus	N		Y			U1	0	11	11	3	154	X	X
Forests	1386	P	Buxbaumia viridis	N		Y			XX	2	9	12	5	153		
Forests	1214	A	Rana arvalis	N			Y		U1	1	8	8	11	152		
Forests	1052	I	Hypodryas maturna	N		Y	Y		U2	1	8	12	6	144		X
Forests	1324	M	Myotis myotis	N		Y	Y		XX	5	11	11	2	143	X	X
Forests	1088	I	Cerambyx cerdo	N		Y	Y		U2	0	9	11	4	135	X	X
Forests	1363	M	Felis silvestris	N			Y		U2	3	9	10	4	126	X	
Forests	1361	M	Lynx lynx	N		Y	Y		U2	2	9	12	2	126	X	
Forests	1312	M	Nyctalus noctula	N			Y		U1	0	12	8	2	120	X	
Forests	1902	P	Cypripedium calceolus	N		Y	Y		U1	2	8	9	5	112		
Forests	1331	M	Nyctalus leisleri	N			Y		XX	0	10	10	1	110		
Forests	1332	M	Vespertilio murinus	N			Y		XX	3	11	10	0	110		
Forests	1381	P	Dicranum viride	N		Y			U1	2	10	8	3	110		
Forests	1317	M	Pipistrellus nathusii	N			Y		U1	1	12	8	1	108	X	
Forests	1207	A	Rana lessonae	N			Y		XX	1	7	8	7	105		
Forests	1281	R	Elaphe longissima	N			Y		U1	2	7	8	7	105	X	
Forests	1326	M	Plecotus auritus	N			Y		U1	1	11	6	3	99		
Forests	1320	M	Myotis brandtii	N			Y		U1	0	11	8	0	88		
Forests	4068	P	Adenophora lilifolia	N		Y	Y		U2	1	5	8	5	65		
Forests	1087	I	Rosalia alpina	Y		Y	Y		U1	2	7	7	2	63	X	
Forests	5009	M	Pipistrellus pygmaeus	N			Y		XX	2	8	6	1	56	X	
Forests	1352	M	Canis lupus	Y		Y	Y		U2	5	7	8	0	56	X	X
Forests	1079	I	Limoniscus violaceus	N		Y			U2	1	5	9	2	55		
Forests	1309	M	Pipistrellus pipistrellus	N			Y		FV	0	11	5	0	55	X	
Forests	4026	I	Rhysodes sulcatus	N		Y			U1	0	6	8	1	54		
Forests	1337	M	Castor fiber	N		Y	Y		U1	12	9	5	0	45		
Forests	1305	M	Rhinolophus euryale	N		Y	Y		U2	0	5	7	2	45	X	
Forests	1167	A	Triturus carnifex	N		Y	Y		U1	2	4	5	6	44		
Forests	1078	I	Callimorpha quadripunctaria	Y		Y			FV	4	11	4	0	44	X	X
Forests	1086	I	Cucujus cinnaberinus	N		Y	Y		U1	1	6	5	2	42		
Forests	1354	M	Ursus arctos	Y		Y	Y		U2	2	5	6	0	30		
Forests	1191	A	Alytes obstetricans	N			Y		U2	0	4	3	4	28		

Forests	1343	M	Sicista betulina	N			Y		XX	0	5	5	0	25		
Forests	1314	M	Myotis daubentonii	N			Y		FV	4	12	2	0	24	X	
Forests	1936	I	Anthrenochernes stellae	N		Y			U2	0	4	5	0	20		
Forests	5365	M	Pipistrellus savii	N			Y		XX	1	5	4	0	20	X	
Forests	1993	A	Triturus dobrogicus	N		Y			U2	0	3	4	2	18	X	X
Forests	1342	M	Dryomys nitedula	N			Y		XX	0	4	3	1	16	X	
Forests	1089	I	Morimus funereus	N		Y			FV	0	5	3	0	15	X	X
Forests	1215	A	Rana latastei	N		Y	Y		U1	0	2	2	4	12		
Forests	1328	M	Nyctalus lasiopterus	N			Y		XX	0	3	4	0	12		
Forests	2001	A	Triturus montandoni	N		Y	Y		U2	1	3	4	0	12		
Forests	1383	P	Dichelyma capillaceum	N		Y			U2	0	2	4	1	10		
Forests	5003	M	Myotis alcathoe	N			Y		XX	0	3	3	0	9	X	
Forests	1085	I	Buprestis splendens	N		Y	Y		U2	0	2	3	1	8		
Forests	1243	R	Algyroides nigropunctatus	N			Y		U1	0	2	1	2	6		
Forests	4036	I	Leptidea morsei	N		Y	Y		U1	0	2	2	1	6	X	
Forests	1387	P	Orthotrichum rogeri	N		Y			XX	1	2	2	0	4		
Forests	4093	P	Rhododendron luteum	N		Y	Y		U1	1	2	1	1	4		
Forests	2097	P	Paeonia officinalis ssp. banatica	N		Y	Y		U1	1	2	2	0	4		
Forests	1927	I	Stephanopachys substriatus	N		Y			XX	0	2	2	0	4		
Forests	1939	P	Agrimonia pilosa	N		Y	Y		FV	0	2	1	0	2		X
Grasslands	6410	H	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	N	Y				U2	0	13	22	9	403	X	X
Grasslands	6210	H	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	N	Y				U2	0	13	19	8	351	X	
Grasslands	6510	H	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	N	Y				U1	0	12	18	8	312	X	X

Grasslands	6230	H	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	Y	Y				U2	0	11	18	7	275		
Grasslands	6430	H	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	N	Y				U1	0	13	12	1	169	X	X
Grasslands	6520	H	Mountain hay meadows	N	Y				U1	0	9	13	5	162		
Grasslands	2330	H	Inland dunes with open Corynephorus and Agrostis grasslands	N	Y				U2	0	8	15	3	144		
Grasslands	6120	H	Xeric sand calcareous grasslands	Y	Y				U2	0	7	12	7	133	X	X
Grasslands	1340	H	Inland salt meadows	Y	Y				U2	0	7	10	4	98		
Grasslands	6440	H	Alluvial meadows of river valleys of the Cnidion dubii	N	Y				U2	0	7	11	3	98	X	X
Grasslands	2130	H	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	Y	Y				U2	0	5	8	3	55	X	X
Grasslands	6130	H	Calaminarian grasslands of the Violetalia calaminariae	N	Y				U1	0	5	7	3	50		
Grasslands	6240	H	Sub-Pannonic steppic grasslands	Y	Y				U1	0	5	6	2	40	X	
Grasslands	2120	H	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	N	Y				U2	0	5	6	1	35	X	
Grasslands	1330	H	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	N	Y				U2	0	4	7	1	32		
Grasslands	1530	H	Pannonic salt steppes and salt marshes	Y	Y				U2	0	3	4	1	15	X	X
Grasslands	6220	H	Pseudo-steppe with grasses and annuals of the Thero-Brachypodietea	Y	Y				FV	0	3	3	1	12	X	

Grasslands	62A0	H	Eastern sub-Mediterranean dry grasslands (Scorzoneratalia villosae)	N	Y				U2	0	3	3	1	12	X	
Grasslands	6170	H	Alpine and subalpine calcareous grasslands	N	Y				U1	0	3	2	1	9		
Grasslands	1410	H	Mediterranean salt meadows (Juncetalia maritimi)	N	Y				XX	0	3	3	0	9	X	X
Grasslands	2340	H	Pannonic inland dunes	Y	Y				U2	1	2	3	0	6		
Grasslands	6250	H	Pannonic loess steppic grasslands	Y	Y				U2	0	2	3	0	6		
Grasslands	6260	H	Pannonic sand steppes	Y	Y				U2	0	2	3	0	6	X	X
Grasslands	6190	H	Rupicolous pannonic grasslands (Stipo-Festucetalia pallentis)	N	Y				U1	0	2	2	0	4		
Grasslands	6420	H	Mediterranean tall humid grasslands of the Molinio-Holoschoenion	N	Y				XX	0	2	2	0	4	X	X
Grasslands	6150	H	Siliceous alpine and boreal grasslands	N	Y				FV	0	3	1	0	3		
Grasslands	1058	I	Maculinea arion	N			Y		U2	0	12	21	16	444	X	
Grasslands	1065	I	Euphydryas aurinia	N		Y			U2	1	13	19	13	416	X	
Grasslands	1261	R	Lacerta agilis	N			Y		U1	0	11	12	9	231	X	
Grasslands	1056	I	Parnassius mnemosyne	N			Y		U1	1	9	13	10	207	X	
Grasslands	1197	A	Pelobates fuscus	N			Y		U1	2	9	13	9	198	X	
Grasslands	1059	I	Maculinea teleius	N		Y	Y		U2	1	8	11	11	176		
Grasslands	1339	M	Cricetus cricetus	N			Y		U2	1	8	11	9	160		
Grasslands	1329	M	Plecotus austriacus	N			Y		XX	0	10	10	5	150	X	
Grasslands	1061	I	Maculinea nausithous	N		Y	Y		U2	1	8	11	7	144		
Grasslands	1057	I	Parnassius apollo	N			Y		U2	0	7	13	7	140		
Grasslands	1321	M	Myotis emarginatus	N		Y	Y		U1	5	11	9	3	132	X	X
Grasslands	1076	I	Proserpinus proserpina	N			Y		XX	2	10	10	3	130		
Grasslands	1263	R	Lacerta viridis	N			Y		U2	0	7	10	8	126	X	
Grasslands	1327	M	Eptesicus serotinus	N			Y		XX	2	11	7	4	121	X	
Grasslands	4096	P	Gladiolus palustris	N		Y	Y		U1	0	8	9	6	120		

Grasslands	1281	R	Elaphe longissima	N			Y		U1	2	7	8	7	105	X	
Grasslands	1060	I	Lycaena dispar	N		Y	Y		U1	10	11	5	4	99	X	X
Grasslands	1256	R	Podarcis muralis	N			Y		FV	2	9	5	5	90	X	
Grasslands	1307	M	Myotis blythii	N		Y	Y		U2	0	7	9	3	84	X	X
Grasslands	1071	I	Coenonympha oedippus	N		Y	Y		U1	0	5	7	8	75	X	
Grasslands	1310	M	Miniopterus schreibersii	N		Y	Y		U2	0	6	9	2	66	X	X
Grasslands	4038	I	Lycaena helle	N		Y	Y		U2	0	5	7	5	60		
Grasslands	4030	I	Colias myrmidone	N		Y	Y		U1	0	5	7	5	60		X
Grasslands	1053	I	Zerynthia polyxena	N			Y		U2	1	5	6	5	55	X	
Grasslands	335	M	Spermophilus citellus	N		Y	Y		U2	0	5	7	4	55	X	X
Grasslands	1070	I	Coenonympha hero	N			Y		U2	0	4	7	5	48		
Grasslands	1437	P	Thesium ebracteatum	N		Y	Y		U1	0	4	7	2	36		
Grasslands	1617	P	Angelica palustris	N		Y	Y		U1	1	4	6	3	36		
Grasslands	4067	P	Echium russicum	N		Y	Y		U2	0	4	6	2	32		X
Grasslands	1279	R	Elaphe quatuorlineata	N		Y	Y		U1	0	4	5	3	32	X	X
Grasslands	4094	P	Gentianella bohemica	Y		Y	Y		U2	0	3	5	3	24		
Grasslands	2093	P	Pulsatilla grandis	N		Y	Y		U1	0	3	4	3	21		X
Grasslands	1477	P	Pulsatilla patens	N		Y	Y		U1	0	4	3	2	20		
Grasslands	4087	P	Serratula lycopifolia	Y		Y	Y		U1	0	4	4	1	20		
Grasslands	2633	M	Mustela eversmannii	N		Y	Y		XX	0	4	4	1	20	X	X
Grasslands	1069	I	Erebia sudetica	N			Y		U2	0	3	5	1	18		
Grasslands	1689	P	Dracocephalum austriacum	N		Y	Y		U1	0	3	3	2	15		
Grasslands	1805	P	Jurinea cyanoides	Y		Y	Y		U2	0	2	4	3	14		
Grasslands	1419	P	Botrychium simplex	N		Y	Y		FV	0	3	3	1	12		
Grasslands	1077	I	Hyles hippophaes	N			Y		XX	0	3	3	1	12	X	
Grasslands	4013	I	Carabus hungaricus	N		Y	Y		U2	0	3	4	0	12		
Grasslands	1396	P	Nothothylas orbicularis	N		Y			U2	0	2	4	1	10		
Grasslands	5003	M	Myotis alcathoe	N			Y		XX	0	3	3	0	9	X	
Grasslands	4011	I	Bolbelasmus unicornis	N		Y	Y		XX	0	3	3	0	9	X	X
Grasslands	4091	P	Crambe tataria	N		Y	Y		U1	0	3	3	0	9		X
Grasslands	4035	I	Gortyna borelii lunata	N		Y	Y		XX	0	3	3	0	9		
Grasslands	4042	I	Polyommatus eroides	N		Y	Y		U2	0	2	3	1	8		

Grasslands	4104	P	Himantoglossum adriaticum	N		Y	Y		FV	0	2	2	1	6		
Grasslands	1298	R	Vipera ursinii	N		Y	Y		U1	0	2	2	1	6	X	
Grasslands	4069	P	Campanula bohemica	Y		Y	Y		U1	0	2	1	1	4		
Grasslands	4113	P	Galium sudeticum	Y		Y	Y		U1	2	2	2	0	4		
Grasslands	2021	M	Sicista subtilis	N		Y	Y		XX	0	2	2	0	4		X
Grasslands	1547	P	Genista holopetala	N		Y	Y		U1	0	2	1	0	2		
Grasslands	1939	P	Agrimonia pilosa	N		Y	Y		FV	0	2	1	0	2		X
Heaths & scrubs	4030	H	European dry heaths	N	Y				U2	2	10	18	6	240	X	
Heaths & scrubs	5130	H	Juniperus communis formations on heaths or calcareous grasslands	N	Y				U2	1	12	14	4	216		
Heaths & scrubs	4010	H	Northern Atlantic wet heaths with Erica tetralix	N	Y				U2	0	6	11	6	102		
Heaths & scrubs	2140	H	Decalcified fixed dunes with Empetrum nigrum	Y	Y				U1	0	4	6	3	36		
Heaths & scrubs	4060	H	Alpine and Boreal heaths	N	Y				FV	0	6	3	1	24		
Heaths & scrubs	2320	H	Dry sand heaths with Calluna and Empetrum nigrum	N	Y				U2	0	3	6	0	18		
Heaths & scrubs	4070	H	Bushes with Pinus mugo and Rhododendron hirsutum (Mugo-Rhododendretum hirsuti)	Y	Y				U1	0	4	3	1	16		
Heaths & scrubs	40A0	H	Subcontinental peri-Pannonic scrub	Y	Y				U1	0	4	3	1	16	X	
Heaths & scrubs	2310	H	Dry sand heaths with Calluna and Genista	N	Y				U1	0	2	4	1	10		
Heaths & scrubs	2160	H	Dunes with Hippophaë rhamnoides	N	Y				U1	0	4	2	0	8	X	X
Heaths & scrubs	4080	H	Sub-Arctic Salix spp. scrub	N	Y				U1	0	4	2	0	8		
Heaths & scrubs	2250	H	Coastal dunes with Juniperus spp.	Y	Y				U2	0	2	3	0	6		
Heaths & scrubs	5110	H	Stable xerothermophilous formations with Buxus sempervirens on rock	N	Y				FV	0	5	1	0	5		

			slopes (Berberidion p.p.)												
Heaths & scrubs	1420	H	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	N	Y				XX	0	2	1	0	2		
Heaths & scrubs	4090	H	Endemic oro-Mediterranean heaths with gorse	N	Y				FV	0	2	1	0	2	X	
Heaths & scrubs	5210	H	Arborescent matorral with Juniperus spp.	N	Y				FV	0	2	1	0	2	X	
Heaths & scrubs	1308	M	Barbastella barbastellus	N		Y	Y		U1	4	13	15	5	260	X	
Heaths & scrubs	1283	R	Coronella austriaca	N			Y		U1	0	11	11	11	242	X	
Heaths & scrubs	1303	M	Rhinolophus hipposideros	N		Y	Y		U1	5	11	14	7	231	X	X
Heaths & scrubs	1304	M	Rhinolophus ferrumequinum	N		Y	Y		U1	3	11	15	4	209	X	X
Heaths & scrubs	1056	I	Parnassius mnemosyne	N			Y		U1	1	9	13	10	207	X	
Heaths & scrubs	1074	I	Eriogaster catax	N		Y	Y		XX	1	10	12	6	180		X
Heaths & scrubs	1323	M	Myotis bechsteinii	N		Y	Y		XX	2	12	12	3	180	X	
Heaths & scrubs	1341	M	Muscardinus avellanarius	N			Y		XX	2	12	8	6	168	X	
Heaths & scrubs	1076	I	Proserpinus proserpina	N			Y		XX	2	10	10	3	130		
Heaths & scrubs	1067	I	Lopinga achine	N			Y		U2	0	8	11	5	128		
Heaths & scrubs	1363	M	Felis silvestris	N			Y		U2	3	9	10	4	126	X	
Heaths & scrubs	1307	M	Myotis blythii	N		Y	Y		U2	0	7	9	3	84	X	X
Heaths & scrubs	1313	M	Eptesicus nilssonii	N			Y		U1	3	8	8	0	64		
Heaths & scrubs	1352	M	Canis lupus	Y		Y	Y		U2	5	7	8	0	56	X	X
Heaths & scrubs	1053	I	Zerynthia polyxena	N			Y		U2	1	5	6	5	55	X	
Heaths & scrubs	1070	I	Coenonympha hero	N			Y		U2	0	4	7	5	48		
Heaths & scrubs	1078	I	Callimorpha quadripunctaria	Y		Y			FV	4	11	4	0	44	X	X
Heaths & scrubs	4014	I	Carabus variolosus	N		Y	Y		U1	0	5	5	3	40		
Heaths & scrubs	1050	I	Saga pedo	N			Y		U1	0	5	6	2	40		
Heaths & scrubs	1279	R	Elaphe quatuorlineata	N		Y	Y		U1	0	4	5	3	32	X	X

Heaths & scrubs	1316	M	Myotis capaccinii	N		Y	Y		U2	0	4	5	2	28	X	X
Heaths & scrubs	1343	M	Sicista betulina	N			Y		XX	0	5	5	0	25		
Heaths & scrubs	1342	M	Dryomys nitedula	N			Y		XX	0	4	3	1	16	X	
Heaths & scrubs	1289	R	Telescopus falax	N			Y		U2	0	3	4	1	15		
Heaths & scrubs	1077	I	Hyles hippophaes	N			Y		XX	0	3	3	1	12	X	
Heaths & scrubs	1284	R	Coluber viridiflavus	N			Y		U1	0	3	2	1	9		
Heaths & scrubs	4011	I	Bolbelasmus unicornis	N		Y	Y		XX	0	3	3	0	9	X	X
Heaths & scrubs	1241	R	Podarcis melisellensis	N			Y		U1	0	2	2	2	8		
Heaths & scrubs	1243	R	Algyroides nigropunctatus	N			Y		U1	0	2	1	2	6		
Heaths & scrubs	1333	M	Tadarida teniotis	N			Y		XX	0	3	2	0	6		
Marine	1310	H	Salicornia and other annuals colonizing mud and sand	N	Y				U1	0	9	11	4	135	X	X
Marine	1150	H	Coastal lagoons	Y	Y				U2	0	6	8	3	66	X	X
Marine	1130	H	Estuaries	N	Y				U2	0	6	5	2	42	X	
Marine	1140	H	Mudflats and sandflats not covered by seawater at low tide	N	Y				U2	0	5	5	0	25	X	
Marine	1320	H	Spartina swards (Spartinion maritimae)	N	Y				U1	0	2	2	1	6		
Mires & bogs	7230	H	Alkaline fens	N	Y				U2	0	13	18	8	338		
Mires & bogs	7140	H	Transition mires and quaking bogs	N	Y				U2	0	13	17	6	299		
Mires & bogs	7220	H	Petrifying springs with tufa formation (Cratoneurion)	Y	Y				U2	0	13	14	3	221	X	
Mires & bogs	7110	H	Active raised bogs	Y	Y				U2	0	9	15	4	171		
Mires & bogs	7210	H	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	Y	Y				U1	0	11	10	5	165	X	X
Mires & bogs	7120	H	Degraded raised bogs still capable of natural regeneration	N	Y				U2	1	8	12	4	128		
Mires & bogs	2190	H	Humid dune slacks	N	Y				U2	0	5	7	1	40	X	X
Mires & bogs	2170	H	Dunes with Salix repens ssp. argentea (Salicion arenariae)	N	Y				XX	0	4	4	1	20		

Mires & bogs	1065	I	Euphydryas aurinia	N		Y			U2	1	13	19	13	416	X	
Mires & bogs	1393	P	Drepanocladus vernicosus	N		Y			U2	1	11	16	9	275		
Mires & bogs	1203	A	Hyla arborea	N			Y		U1	5	11	13	12	275	X	
Mires & bogs	1202	A	Bufo calamita	N			Y		U2	1	9	17	13	270		
Mires & bogs	1042	I	Leucorrhinia pectoralis	N		Y	Y		U1	2	11	14	10	264		
Mires & bogs	1166	A	Triturus cristatus	N		Y	Y		U1	4	11	13	10	253		
Mires & bogs	1201	A	Bufo viridis	N			Y		U2	2	10	14	10	240	X	
Mires & bogs	1903	P	Liparis loeselii	N		Y	Y		U1	3	11	14	7	231		
Mires & bogs	1303	M	Rhinolophus hipposideros	N		Y	Y		U1	5	11	14	7	231	X	X
Mires & bogs	1193	A	Bombina variegata	N		Y	Y		U2	0	10	13	9	220	X	
Mires & bogs	1014	I	Vertigo angustior	N		Y			U1	1	11	11	8	209	X	
Mires & bogs	1197	A	Pelobates fuscus	N			Y		U1	2	9	13	9	198	X	
Mires & bogs	1209	A	Rana dalmatina	N			Y		U2	5	10	9	9	180	X	
Mires & bogs	1059	I	Maculinea teleius	N		Y	Y		U2	1	8	11	11	176		
Mires & bogs	1220	R	Emys orbicularis	N		Y	Y		U2	2	8	13	9	176	X	X
Mires & bogs	1188	A	Bombina bombina	N		Y	Y		U1	6	9	11	8	171	X	X
Mires & bogs	1355	M	Lutra lutra	N		Y	Y		U1	10	11	11	3	154	X	X
Mires & bogs	1214	A	Rana arvalis	N			Y		U1	1	8	8	11	152		
Mires & bogs	1061	I	Maculinea nausithous	N		Y	Y		U2	1	8	11	7	144		
Mires & bogs	1037	I	Ophiogomphus cecilia	N		Y	Y		U1	4	10	9	5	140	X	X
Mires & bogs	1016	I	Vertigo moulinsiana	N		Y			U1	3	10	9	4	130	X	
Mires & bogs	1093	I	Austropotamobius torrentium	Y		Y		Y	U1	2	8	10	6	128		
Mires & bogs	1312	M	Nyctalus noctula	N			Y		U1	0	12	8	2	120	X	
Mires & bogs	4096	P	Gladiolus palustris	N		Y	Y		U1	0	8	9	6	120		
Mires & bogs	4045	I	Coenagrion ornatum	N		Y			U1	2	7	10	6	112	X	X
Mires & bogs	1207	A	Rana lessonae	N			Y		XX	1	7	8	7	105		
Mires & bogs	1428	P	Marsilea quadrifolia	N		Y	Y		U2	1	7	9	6	105		X
Mires & bogs	1725	P	Lindernia procumbens	N			Y		U2	0	8	9	4	104		
Mires & bogs	1318	M	Myotis dasycneme	N		Y	Y		U1	4	9	10	1	99		
Mires & bogs	1060	I	Lycaena dispar	N		Y	Y		U1	10	11	5	4	99	X	X
Mires & bogs	1035	I	Leucorrhinia caudalis	N			Y		U2	2	7	9	5	98		

Mires & bogs	1831	P	Luronium natans	N		Y	Y		U2	1	6	10	6	96		
Mires & bogs	1048	I	Aeshna viridis	N			Y		U2	2	6	8	7	90		
Mires & bogs	1320	M	Myotis brandtii	N			Y		U1	0	11	8	0	88		
Mires & bogs	1044	I	Coenagrion mercuriale	N		Y			U2	1	6	10	4	84		
Mires & bogs	1071	I	Coenonympha oedippus	N		Y	Y		U1	0	5	7	8	75	X	
Mires & bogs	1614	P	Apium repens	N		Y	Y		U2	0	5	8	6	70		
Mires & bogs	1040	I	Stylurus flavipes	N			Y		U1	3	6	7	4	66		
Mires & bogs	1313	M	Eptesicus nilssonii	N			Y		U1	3	8	8	0	64		
Mires & bogs	1013	I	Vertigo geyeri	N		Y			XX	1	5	8	4	60		
Mires & bogs	4038	I	Lycaena helle	N		Y	Y		U2	0	5	7	5	60		
Mires & bogs	1292	R	Natrix tessellata	N			Y		U1	0	6	7	3	60	X	
Mires & bogs	5009	M	Pipistrellus pygmaeus	N			Y		XX	2	8	6	1	56	X	
Mires & bogs	1337	M	Castor fiber	N		Y	Y		U1	12	9	5	0	45		
Mires & bogs	1898	P	Eleocharis carniolica	N		Y	Y		U1	0	5	6	3	45	X	
Mires & bogs	1167	A	Triturus carnifex	N		Y	Y		U1	2	4	5	6	44		
Mires & bogs	1038	I	Leucorrhinia albifrons	N			Y		U2	2	5	6	2	40		
Mires & bogs	1914	I	Carabus menetriesi pacholei	Y		Y			U2	1	4	7	3	40		
Mires & bogs	4014	I	Carabus variolosus	N		Y	Y		U1	0	5	5	3	40		
Mires & bogs	1092	I	Austropotamobius pallipes	N		Y		Y	U2	1	4	4	5	36		
Mires & bogs	1528	P	Saxifraga hirculus	N		Y	Y		U2	0	3	6	6	36		
Mires & bogs	1617	P	Angelica palustris	N		Y	Y		U1	1	4	6	3	36		
Mires & bogs	1041	I	Oxygastra curtisii	N		Y	Y		U1	3	5	4	3	35		
Mires & bogs	1900	P	Spiranthes aestivalis	N			Y		U2	0	4	5	3	32		
Mires & bogs	1191	A	Alytes obstetricans	N			Y		U2	0	4	3	4	28		
Mires & bogs	1039	I	Sympecma braueri	N			Y		U1	1	4	5	2	28		
Mires & bogs	1316	M	Myotis capaccinii	N		Y	Y		U2	0	4	5	2	28	X	X
Mires & bogs	1832	P	Caldesia parnassifolia	N		Y	Y		U2	0	3	4	4	24		
Mires & bogs	1516	P	Aldrovanda vesiculosa	N		Y	Y		U1	0	4	5	1	24		X
Mires & bogs	1993	A	Triturus dobrogicus	N		Y			U2	0	3	4	2	18	X	X
Mires & bogs	1758	P	Ligularia sibirica	N		Y	Y		U1	0	4	4	0	16		
Mires & bogs	1217	R	Testudo hermanni	N		Y	Y		U1	0	3	3	2	15	X	X

Mires & bogs	1215	A	Rana latastei	N		Y	Y		U1	0	2	2	4	12		
Mires & bogs	2001	A	Triturus montandoni	N		Y	Y		U2	1	3	4	0	12		
Mires & bogs	1383	P	Dichelyma capillaceum	N		Y			U2	0	2	4	1	10		
Mires & bogs	1670	P	Myosotis rehsteineri	N		Y	Y		U2	0	2	3	2	10		
Mires & bogs	1389	P	Meesia longiseta	N		Y			U2	0	2	3	2	10		
Mires & bogs	4064	I	Theodoxus transversalis	N		Y	Y		XX	0	3	3	0	9		X
Mires & bogs	1887	P	Coleanthus subtilis	N		Y	Y		FV	3	3	2	0	6		
Mires & bogs	1186	A	Proteus anguinus	Y		Y	Y		U1	0	2	1	2	6		
Mires & bogs	4046	I	Cordulegaster heros	N		Y	Y		FV	0	3	2	0	6		
Mires & bogs	1714	P	Euphrasia marchesettii	N		Y	Y		U1	0	2	2	0	4		
Mires & bogs	2217	P	Pedicularis sudetica	Y		Y	Y		U1	1	2	2	0	4		
Mires & bogs	4093	P	Rhododendron luteum	N		Y	Y		U1	1	2	1	1	4		
Mires & bogs	1493	P	Sisymbrium supinum	N		Y	Y		U2	0	2	2	0	4		
Mires & bogs	4019	I	Leptodirus hochenwarti	N		Y	Y		FV	0	2	0	0	0		
Rivers & lakes	3130	H	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	N	Y				U2	0	13	17	5	286	X	X
Rivers & lakes	3150	H	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	N	Y				U2	1	13	17	3	260	X	X
Rivers & lakes	3160	H	Natural dystrophic lakes and ponds	N	Y				U2	0	10	15	5	200	X	X
Rivers & lakes	3260	H	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	N	Y				U1	0	13	14	1	195	X	X
Rivers & lakes	3140	H	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	N	Y				U2	0	12	14	1	180	X	X
Rivers & lakes	3270	H	Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation	N	Y				U2	0	11	13	2	165	X	X

Rivers & lakes	3220	H	Alpine rivers and the herbaceous vegetation along their banks	N	Y				U2	0	7	11	3	98		
Rivers & lakes	3240	H	Alpine rivers and their ligneous vegetation with Salix elaeagnos	N	Y				U2	0	6	9	4	78		X
Rivers & lakes	3110	H	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	N	Y				U1	0	5	8	3	55		
Rivers & lakes	3230	H	Alpine rivers and their ligneous vegetation with Myricaria germanica	N	Y				U2	0	4	7	3	40		
Rivers & lakes	3180	H	Turloughs	Y	Y				U1	1	2	1	0	2		
Rivers & lakes	1032	I	Unio crassus	N		Y	Y		U2	2	12	20	9	348	X	
Rivers & lakes	1203	A	Hyla arborea	N			Y		U1	5	11	13	12	275	X	
Rivers & lakes	1042	I	Leucorrhinia pectoralis	N		Y	Y		U1	2	11	14	10	264		
Rivers & lakes	1029	I	Margaritifera margaritifera	N		Y			U2	0	8	16	12	224		
Rivers & lakes	1220	R	Emys orbicularis	N		Y	Y		U2	2	8	13	9	176	X	X
Rivers & lakes	1134	F	Rhodeus sericeus amarus	N		Y			U2	5	10	10	7	170	X	X
Rivers & lakes	1145	F	Misgurnus fossilis	N		Y			U1	0	9	11	7	162	X	X
Rivers & lakes	1149	F	Cobitis taenia	N		Y			U1	1	12	11	2	156	X	X
Rivers & lakes	1355	M	Lutra lutra	N		Y	Y		U1	10	11	11	3	154	X	X
Rivers & lakes	1037	I	Ophiogomphus cecilia	N		Y	Y		U1	4	10	9	5	140	X	X
Rivers & lakes	1082	I	Graphoderus bilineatus	N		Y	Y		FV	0	9	12	3	135		X
Rivers & lakes	1093	I	Austropotamobius torrentium	Y		Y		Y	U1	2	8	10	6	128		
Rivers & lakes	1163	F	Cottus gobio	N		Y			FV	5	12	6	4	120		
Rivers & lakes	4056	I	Anisus vorticulus	N		Y	Y		U2	0	7	10	6	112	X	X
Rivers & lakes	4045	I	Coenagrion ornatum	N		Y			U1	2	7	10	6	112	X	X
Rivers & lakes	1428	P	Marsilea quadrifolia	N		Y	Y		U2	1	7	9	6	105		X
Rivers & lakes	1096	F	Lampetra planeri	N		Y			U1	6	9	8	3	99		
Rivers & lakes	1318	M	Myotis dasycneme	N		Y	Y		U1	4	9	10	1	99		
Rivers & lakes	1035	I	Leucorrhinia caudalis	N			Y		U2	2	7	9	5	98		
Rivers & lakes	1831	P	Luronium natans	N		Y	Y		U2	1	6	10	6	96		
Rivers & lakes	1106	F	Salmo salar	N		Y			U2	7	7	12	1	91		

Rivers & lakes	1048	I	Aeshna viridis	N			Y		U2	2	6	8	7	90		
Rivers & lakes	1044	I	Coenagrion mercuriale	N		Y			U2	1	6	10	4	84		
Rivers & lakes	2484	F	Eudontomyzon mariae	N		Y			U1	1	7	10	2	84		
Rivers & lakes	1099	F	Lampetra fluviatilis	N		Y		Y	U2	3	6	11	1	72		
Rivers & lakes	1130	F	Aspius aspius	N		Y		Y	U1	5	9	6	2	72	X	X
Rivers & lakes	1614	P	Apium repens	N		Y	Y		U2	0	5	8	6	70		
Rivers & lakes	1040	I	Stylurus flavipes	N			Y		U1	3	6	7	4	66		
Rivers & lakes	1138	F	Barbus meridionalis	N		Y		Y	U2	0	6	7	4	66		
Rivers & lakes	1146	F	Sabanejewia aurata	N		Y			U1	1	6	8	0	48	X	X
Rivers & lakes	1131	F	Leuciscus souffia	N		Y			U1	0	6	5	2	42		
Rivers & lakes	6158	F	Gobio albipinnatus	N		Y			U2	2	5	6	2	40	X	X
Rivers & lakes	1038	I	Leucorrhinia albifrons	N			Y		U2	2	5	6	2	40		
Rivers & lakes	1095	F	Petromyzon marinus	N		Y			U1	1	5	7	1	40		
Rivers & lakes	1105	F	Hucho hucho	N		Y		Y	U2	0	4	5	5	40		
Rivers & lakes	1160	F	Zingel streber	N		Y			U2	0	5	6	2	40	X	X
Rivers & lakes	1092	I	Austropotamobius pallipes	N		Y		Y	U2	1	4	4	5	36		
Rivers & lakes	1114	F	Rutilus pigus	N		Y		Y	U2	0	4	5	4	36		
Rivers & lakes	1041	I	Oxygastra curtisii	N		Y	Y		U1	3	5	4	3	35		
Rivers & lakes	1081	I	Dytiscus latissimus	N		Y	Y		U2	0	4	5	3	32		
Rivers & lakes	1159	F	Zingel zingel	N		Y		Y	U1	0	5	5	1	30	X	X
Rivers & lakes	2522	F	Pelecus cultratus	N		Y			XX	0	6	5	0	30	X	X
Rivers & lakes	1102	F	Alosa alosa	N		Y		Y	U2	3	4	6	1	28		
Rivers & lakes	1103	F	Alosa fallax	N		Y		Y	U2	0	4	6	1	28	X	
Rivers & lakes	1039	I	Sympecma braueri	N			Y		U1	1	4	5	2	28		
Rivers & lakes	1122	F	Gobio uranoscopus	N		Y			U1	0	4	5	2	28		
Rivers & lakes	2511	F	Gobio kessleri	N		Y			U2	2	5	5	0	25		X
Rivers & lakes	1157	F	Gymnocephalus schraetzer	N		Y		Y	U1	0	5	5	0	25	X	X
Rivers & lakes	1832	P	Caldesia parnassifolia	N		Y	Y		U2	0	3	4	4	24		
Rivers & lakes	1516	P	Aldrovanda vesiculosa	N		Y	Y		U1	0	4	5	1	24		X
Rivers & lakes	1314	M	Myotis daubentonii	N			Y		FV	4	12	2	0	24	X	
Rivers & lakes	2555	F	Gymnocephalus baloni	N		Y	Y		U1	0	4	4	0	16	X	X
Rivers & lakes	1217	R	Testudo hermanni	N		Y	Y		U1	0	3	3	2	15	X	X

Rivers & lakes	2011	F	Umbra krameri	N		Y			U2	0	3	4	1	15	X	X
Rivers & lakes	1115	F	Chondrostoma genei	N		Y			U2	0	2	4	2	12		
Rivers & lakes	2533	F	Cobitis elongata	N		Y			U1	0	3	3	1	12		
Rivers & lakes	1107	F	Salmo marmoratus	N		Y			U1	0	2	2	3	10		
Rivers & lakes	4064	I	Theodoxus transversalis	N		Y	Y		XX	0	3	3	0	9		X
Rivers & lakes	1152	F	Aphanius fasciatus	N		Y			XX	0	2	2	2	8		
Rivers & lakes	1137	F	Barbus plebejus	N		Y		Y	U1	0	2	2	2	8		
Rivers & lakes	1097	F	Lethenteron zanandreai	N		Y		Y	U1	0	2	2	2	8		
Rivers & lakes	5088	F	Barbus cyclolepis	N		Y		Y	U1	0	2	2	2	8		
Rivers & lakes	1120	F	Alburnus albidus	N		Y			XX	0	2	2	1	6		
Rivers & lakes	5289	F	Chalcalburnus chalcoides	N		Y			XX	0	3	2	0	6	X	X
Rivers & lakes	4046	I	Cordulegaster heros	N		Y	Y		FV	0	3	2	0	6		
Rivers & lakes	1139	F	Rutilus frisii meidingeri	N		Y		Y	XX	0	2	2	0	4		
Rivers & lakes	1136	F	Rutilus rubilio	N		Y			U2	1	2	1	1	4		
Sparsely vegetated land	7150	H	Depressions on peat substrates of the Rhynchosporion	N	Y				U2	0	10	14	3	170		
Sparsely vegetated land	6110	H	Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi	Y	Y				U1	0	12	12	2	168	X	
Sparsely vegetated land	8220	H	Siliceous rocky slopes with chasmophytic vegetation	N	Y				FV	0	13	10	1	143	X	
Sparsely vegetated land	8310	H	Caves not open to the public	N	Y				U2	2	12	8	2	120	X	X
Sparsely vegetated land	8230	H	Siliceous rock with pioneer vegetation of the Sedo-Scleranthion or of the Sedo albi-Veronicion dillenii	N	Y				U1	0	10	10	1	110	X	X
Sparsely vegetated land	8210	H	Calcareous rocky slopes with chasmophytic vegetation	N	Y				FV	1	11	9	1	110	X	
Sparsely vegetated land	8160	H	Medio-European calcareous scree of hill and montane levels	Y	Y				FV	1	9	7	1	72		

Sparsely vegetated land	8150	H	Medio-European upland siliceous screes	N	Y				FV	0	7	8	1	63		
Sparsely vegetated land	1210	H	Annual vegetation of drift lines	N	Y				U1	0	6	5	2	42	X	X
Sparsely vegetated land	2110	H	Embryonic shifting dunes	N	Y				U1	0	5	5	2	35	X	X
Sparsely vegetated land	1230	H	Vegetated sea cliffs of the Atlantic and Baltic Coasts	N	Y				FV	0	4	2	1	12		
Sparsely vegetated land	8110	H	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	N	Y				FV	0	6	2	0	12		
Sparsely vegetated land	8120	H	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	N	Y				FV	0	4	3	0	12		
Sparsely vegetated land	1220	H	Perennial vegetation of stony banks	N	Y				U1	0	3	3	0	9		
Sparsely vegetated land	8240	H	Limestone pavements	Y	Y				XX	0	3	1	0	3		
Sparsely vegetated land	1240	H	Vegetated sea cliffs of the Mediterranean coasts with endemic Limonium spp.	N	Y				FV	0	2	0	0	0	X	
Sparsely vegetated land	8130	H	Western Mediterranean and thermophilous scree	N	Y				FV	0	2	0	0	0		
Sparsely vegetated land	1058	I	Maculinea arion	N			Y		U2	0	12	21	16	444	X	
Sparsely vegetated land	1283	R	Coronella austriaca	N			Y		U1	0	11	11	11	242	X	
Sparsely vegetated land	1261	R	Lacerta agilis	N			Y		U1	0	11	12	9	231	X	
Sparsely vegetated land	1329	M	Plecotus austriacus	N			Y		XX	0	10	10	5	150		
Sparsely vegetated land	1057	I	Parnassius apollo	N			Y		U2	0	7	13	7	140		
Sparsely vegetated land	1332	M	Vespertilio murinus	N			Y		XX	3	11	10	0	110		
Sparsely vegetated land	1256	R	Podarcis muralis	N			Y		FV	2	9	5	5	90	X	
Sparsely vegetated land	1379	P	Mannia triandra	N		Y			U1	0	5	6	4	50		
Sparsely vegetated land	4066	P	Asplenium adulterinum	N		Y	Y		U1	0	6	5	2	42		
Sparsely vegetated land	1421	P	Trichomanes speciosum	N		Y	Y		FV	1	6	4	1	30		
Sparsely vegetated land	5365	M	Pipistrellus savii	N			Y		XX	1	5	4	0	20	X	

Sparsely vegetated land	2016	M	Pipistrellus kuhlii	**N**			**Y**		**FV**	2	**6**	**3**	**0**	**18**	**X**	
Sparsely vegetated land	1289	R	Telescopus falax	**N**			**Y**		**U2**	0	**3**	**4**	**1**	**15**		
Sparsely vegetated land	1284	R	Coluber viridiflavus	**N**			**Y**		**U1**	0	**3**	**2**	**1**	**9**		
Sparsely vegetated land	1241	R	Podarcis melisellensis	**N**			**Y**		**U1**	0	**2**	**2**	**2**	**8**		
Sparsely vegetated land	1250	R	Podarcis sicula	**N**			**Y**		**XX**	0	**2**	**2**	**2**	**8**		
Sparsely vegetated land	1295	R	Vipera ammodytes	**N**			**Y**		**U1**	0	**2**	**2**	**2**	**8**	**X**	
Sparsely vegetated land	1186	A	Proteus anguinus	**Y**		**Y**	**Y**		**U1**	0	**2**	**1**	**2**	**6**		
Sparsely vegetated land	1333	M	Tadarida teniotis	**N**			**Y**		**XX**	0	**3**	**2**	**0**	**6**		
Sparsely vegetated land	1493	P	Sisymbrium supinum	**N**		**Y**	**Y**		**U2**	0	**2**	**2**	**0**	**4**		
Sparsely vegetated land	1458	P	Moehringia tommasinii	**N**		**Y**	**Y**		**U1**	0	**2**	**1**	**0**	**2**		

Appendix 2. List of species and habitats types of the Pannonian region

- Different colours are used for different habitat groups. Species/habitat types present in only one MS are included.
- H= habitat type, A = amphibian, I = invertebrate, M = mammal, P = plant, R = reptile
- **Prio** = priority habitat type or species
- **I, II and IV** refer to Annexes of the Habitats Directive.
- **PAN CS** = Conservation status at the Pannonian region. Red = unfavourable-bad, amber = unfavourable-inadequate, grey = unknown.
- **Positive trend**: positive trend for population & habitat for species or area of the habitat were used. 0 means that there was not any positive trend reported under the used parameters.
- **Criterion A**= number of MS where species/habitat type is present, **Criterion B** = species/habitat types at U2, U1 or unknown status and **Criterion C**= negative trend and **A(B+C)** = the agreed algorithm.
- Cells in yellow highlight the data that was used for ranking the habitat types and species.

Habitat group	N2K code	Taxono-mical group	Description	Prio	I	II	IV	V	PAN CS	Positive trends	Criterion A	Criterion B	Criterion C	A*(B+C)	Occur in BLS	Occur in STE
Forests	91F0	H	Riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor, Fraxinus excelsior or Fraxinus angustifolia, along the great rivers (Ulmenion minoris)	N	Y				U2	0	4	7	2	36	X	X
Forests	91I0	H	Euro-Siberian steppic woods with Quercus spp.	Y	Y				U2	0	4	7	2	36	X	X
Forests	91E0	H	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	Y	Y				U2	0	3	6	2	24	X	
Forests	9180	H	Tilio-Acerion forests of slopes, screes and ravines	Y	Y				U2	0	3	5	1	18	X	

Forests	91M0	H	Pannonian-Balkanic turkey oak –sessile oak forests	N	Y				U2	0	3	4	2	18	X	X
Forests	91G0	H	Pannonic woods with Quercus petraea and Carpinus betulus	Y	Y				U2	1	3	5	0	15	X	
Forests	91H0	H	Pannonian woods with Quercus pubescens	Y	Y				U2	1	3	4	1	15	X	
Forests	91N0	H	Pannonic inland sand dune thicket (Junipero-Populetum albae)	Y	Y				U2	1	2	4	1	10		
Forests	9110	H	Luzulo-Fagetum beech forests	N	Y				U2	1	2	3	0	6		
Forests	9190	H	Old acidophilous oak woods with Quercus robur on sandy plains	N	Y				U1	1	2	3	0	6		
Forests	9130	H	Asperulo-Fagetum beech forests	N	Y				U2	0	2	2	0	4		
Forests	9150	H	Medio-European limestone beech forests of the Cephalanthero-Fagion	N	Y				U2	0	2	2	0	4		
Forests	1326	M	Plecotus auritus	N			Y		U1	0	3	4	4	24		
Forests	1188	A	Bombina bombina	N		Y	Y		U1	0	4	4	2	24	X	X
Forests	1088	I	Cerambyx cerdo	N		Y	Y		U1	0	4	5	1	24	X	X
Forests	1323	M	Myotis bechsteinii	N		Y	Y		XX	0	4	4	2	24	X	
Forests	1304	M	Rhinolophus ferrumequinum	N		Y	Y		U1	1	4	5	1	24	X	X
Forests	1993	A	Triturus dobrogicus	N		Y			U1	2	4	5	1	24	X	X
Forests	1214	A	Rana arvalis	N			Y		U1	0	3	4	3	21		
Forests	1207	A	Rana lessonae	N			Y		U1	0	3	4	3	21		
Forests	1193	A	Bombina variegata	N		Y	Y		U1	0	4	4	1	20	X	
Forests	1308	M	Barbastella barbastellus	N		Y	Y		XX	0	3	3	2	15	X	
Forests	1320	M	Myotis brandtii	N			Y		XX	1	3	3	2	15		
Forests	1322	M	Myotis nattereri	N			Y		U1	0	3	3	2	15		
Forests	1331	M	Nyctalus leisleri	N			Y		XX	0	3	3	2	15		
Forests	4052	I	Odontopodisma rubripes	N		Y	Y		XX	0	3	3	2	15		
Forests	1902	P	Cypripedium calceolus	N		Y	Y		U1	1	3	4	0	12		
Forests	1363	M	Felis silvestris	N			Y		U2	0	2	3	3	12	X	
Forests	1084	I	Osmoderma eremita	Y		Y	Y		XX	0	3	4	0	12	X	X

Forests	1209	A	Rana dalmatina	N			Y		U1	1	3	3	1	12	X	
Forests	4068	P	Adenophora lilifolia	N		Y	Y		U2	0	3	3	1	12		
Forests	1281	R	Elaphe longissima	N			Y		XX	2	3	3	0	9	X	
Forests	1341	M	Muscardinus avellanarius	N			Y		XX	0	3	3	0	9	X	
Forests	1314	M	Myotis daubentonii	N			Y		XX	3	3	2	1	9	X	
Forests	1052	I	Hypodryas maturna	N		Y	Y		U1	0	3	2	1	9		X
Forests	1166	A	Triturus cristatus	N		Y	Y		U1	0	3	3	0	9		
Forests	1342	M	Dryomys nitedula	N			Y		U2	0	2	3	1	8	X	
Forests	5037	R	Lacerta vivipara pannonica	N			Y		U1	0	2	2	2	8		
Forests	4036	I	Leptidea morsei	N		Y	Y		U2	0	2	3	1	8	X	
Forests	1328	M	Nyctalus lasiopterus	N			Y		U1	0	2	2	2	8		
Forests	1167	A	Triturus carnifex	N		Y	Y		U2	0	2	3	1	8		
Forests	1083	I	Lucanus cervus	N		Y			FV	0	4	2	0	8	X	X
Forests	1086	I	Cucujus cinnaberinus	N		Y	Y		XX	1	3	2	0	6		
Forests	1079	I	Limoniscus violaceus	N		Y			U2	0	2	3	0	6		
Forests	1361	M	Lynx lynx	N		Y	Y		U2	0	2	3	0	6	X	
Forests	5003	M	Myotis alcathoe	N			Y		U1	1	2	2	1	6	X	
Forests	1324	M	Myotis myotis	N		Y	Y		U1	3	3	2	0	6	X	X
Forests	1312	M	Nyctalus noctula	N			Y		FV	0	3	2	0	6	X	
Forests	1317	M	Pipistrellus nathusii	N			Y		FV	1	3	2	0	6	X	
Forests	5009	M	Pipistrellus pygmaeus	N			Y		XX	2	3	2	0	6	X	
Forests	5365	M	Pipistrellus savii	N			Y		FV	2	3	2	0	6	X	
Forests	4032	I	Dioszeghyana schmidtii	N		Y	Y		U1	1	3	2	0	6		
Forests	1352	M	Canis lupus	Y		Y	Y		U1	2	2	2	0	4	X	X
Forests	1305	M	Rhinolophus euryale	N		Y	Y		U1	2	2	1	1	4	X	
Forests	4026	I	Rhysodes sulcatus	N		Y			XX	0	2	2	0	4		
Forests	4027	I	Arytrura musculus	N		Y	Y		U1	0	2	2	0	4		X
Forests	4057	I	Chilostoma banaticum	N		Y	Y		U1	2	2	2	0	4		
Forests	1078	I	Callimorpha quadripunctaria	Y		Y			FV	1	4	1	0	4	X	X
Forests	1309	M	Pipistrellus pipistrellus	N			Y		FV	1	3	1	0	3	X	
Forests	1332	M	Vespertilio murinus	N			Y		XX	3	3	1	0	3		
Forests	1087	I	Rosalia alpina	Y		Y	Y		XX	2	2	1	0	2	X	
Grasslands	6260	H	Pannonic sand steppes	Y	Y				U2	0	4	7	4	44	X	X

Grasslands	6250	H	Pannonic loess steppic grasslands	Y	Y				U2	0	4	6	3	36		
Grasslands	6410	H	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	N	Y				U2	0	4	6	2	32	X	X
Grasslands	6440	H	Alluvial meadows of river valleys of the Cnidion dubii	N	Y				U2	0	4	6	2	32	X	X
Grasslands	1530	H	Pannonic salt steppes and salt marshes	Y	Y				U2	0	4	5	2	28	X	X
Grasslands	6430	H	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	N	Y				U2	0	4	6	1	28	X	X
Grasslands	6510	H	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	N	Y				U2	1	4	6	1	28	X	X
Grasslands	6240	H	Sub-Pannonic steppic grasslands	Y	Y				U2	0	3	5	3	24	X	
Grasslands	6210	H	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	N	Y				U2	0	3	5	2	21	X	
Grasslands	2340	H	Pannonic inland dunes	Y	Y				U2	0	3	4	1	15		
Grasslands	1340	H	Inland salt meadows	Y	Y				U2	0	2	4	2	12		
Grasslands	6110	H	Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi	Y	Y				XX	0	3	4	0	12	X	
Grasslands	6190	H	Rupicolous pannonic grasslands (Stipo-Festucetalia pallentis)	N	Y				U1	0	3	2	1	9		
Grasslands	1335	M	Spermophilus citellus	N		Y	Y		U1	0	4	6	5	44	X	X
Grasslands	2633	M	Mustela eversmannii	N		Y	Y		XX	0	4	5	2	28	X	X
Grasslands	4110	P	Pulsatilla pratensis ssp. hungarica	Y		Y	Y		U2	0	3	5	4	27		
Grasslands	4098	P	Iris humilis ssp. arenaria	N		Y	Y		U1	1	4	4	2	24		
Grasslands	4013	I	Carabus hungaricus	N		Y	Y		FV	1	4	5	1	24		
Grasslands	1059	I	Maculinea teleius	N		Y	Y		U1	0	4	4	2	24		
Grasslands	4096	P	Gladiolus palustris	N		Y	Y		U2	2	3	6	1	21		
Grasslands	1061	I	Maculinea nausithous	N		Y	Y		U1	0	3	4	3	21		

Grasslands	2093	P	Pulsatilla grandis	N		Y	Y		U1	0	3	3	4	21		X
Grasslands	1617	P	Angelica palustris	N		Y	Y		U2	0	3	5	2	21		
Grasslands	4011	I	Bolbelasmus unicornis	N		Y	Y		XX	0	3	5	1	18	X	X
Grasslands	1689	P	Dracocephalum austriacum	N		Y	Y		U1	1	3	4	2	18		
Grasslands	4067	P	Echium russicum	N		Y	Y		FV	1	3	4	2	18		X
Grasslands	4030	I	Colias myrmidone	N		Y	Y		U2	0	2	4	4	16		X
Grasslands	1014	I	Vertigo angustior	N		Y			FV	0	4	4	0	16	X	
Grasslands	1308	M	Barbastella barbastellus	N		Y	Y		XX	0	3	3	2	15	X	
Grasslands	4091	P	Crambe tataria	N		Y	Y		U1	0	3	2	3	15	X	X
Grasslands	1056	I	Parnassius mnemosyne	N			Y		U1	0	3	3	2	15	X	
Grasslands	4097	P	Iris aphylla ssp. hungarica	N		Y	Y		U1	0	3	3	2	15		X
Grasslands	1058	I	Maculinea arion	N			Y		U2	0	2	4	3	14	X	
Grasslands	4004	M	Microtus oeconomus mehelyi	Y		Y	Y		U2	0	2	3	4	14		
Grasslands	2285	P	Colchicum arenarium	N		Y	Y		U1	1	2	3	3	12		
Grasslands	1339	M	Cricetus cricetus	N			Y		U1	1	3	2	2	12		
Grasslands	2327	P	Himantoglossum caprinum	N		Y	Y		U1	0	2	3	3	12	X	X
Grasslands	1263	R	Lacerta viridis	N			Y		XX	0	3	3	1	12	X	
Grasslands	1307	M	Myotis blythii	N		Y	Y		U1	1	3	3	1	12	X	X
Grasslands	1197	A	Pelobates fuscus	N			Y		U1	0	3	3	1	12	X	
Grasslands	4055	I	Stenobothrus eurasius	N		Y	Y		U1	0	2	2	4	12		
Grasslands	4104	P	Himantoglossum adriaticum	N		Y	Y		U1	0	2	3	2	10		
Grasslands	2203	P	Onosma tornensis	Y		Y	Y		U1	0	2	2	3	10		
Grasslands	1281	R	Elaphe longissima	N			Y		XX	2	3	3	0	9	X	
Grasslands	4050	I	Isophya stysi	N		Y	Y		U1	1	2	2	2	8		
Grasslands	1310	M	Miniopterus schreibersii	N		Y	Y		U2	1	2	3	1	8	X	X
Grasslands	1477	P	Pulsatilla patens	N		Y	Y		U2	0	2	2	2	8		
Grasslands	4074	P	Dianthus diutinus	Y		Y	Y		U2	0	2	3	1	8		
Grasslands	1060	I	Lycaena dispar	N		Y	Y		U1	0	4	2	0	8	X	X
Grasslands	5003	M	Myotis alcathoe	N			Y		U1	1	2	2	1	6	X	
Grasslands	1076	I	Proserpinus proserpina	N			Y		XX	1	3	2	0	6		
Grasslands	2021	M	Sicista subtilis	N		Y	Y		XX	0	2	3	0	6		X
Grasslands	1053	I	Zerynthia polyxena	N			Y		FV	0	3	1	1	6	X	
Grasslands	4020	I	Pilemia tigrina	N		Y	Y		U1	0	2	2	1	6		

Grasslands	1276	R	Ablepharus kitaibelii	N			Y		U1	0	2	2	0	4	X	
Grasslands	4022	I	Probaticus subrugosus	N		Y	Y		XX	0	2	2	0	4	X	
Grasslands	4087	P	Serratula lycopifolia	Y		Y	Y		U1	0	2	2	0	4		
Grasslands	2120	P	Thlaspi jankae	N		Y	Y		FV	1	2	1	1	4		
Grasslands	4035	I	Gortyna borelii lunata	N		Y	Y		U1	2	2	2	0	4		
Grasslands	1327	M	Eptesicus serotinus	N			Y		FV	1	3	1	0	3	X	
Grasslands	1261	R	Lacerta agilis	N			Y		XX	0	3	1	0	3	X	
Grasslands	1321	M	Myotis emarginatus	N		Y	Y		FV	3	3	1	0	3	X	X
Grasslands	1016	I	Vertigo moulinsiana	N		Y			FV	0	3	1	0	3	X	
Grasslands	1256	R	Podarcis muralis	N			Y		XX	0	2	1	0	2	X	
Heaths & scrubs	40A0	H	Subcontinental peri-Pannonic scrub	Y	Y				U2	1	4	6	2	32	X	
Heaths & scrubs	4030	H	European dry heaths	N	Y				U2	0	3	4	2	18	X	
Heaths & scrubs	5130	H	Juniperus communis formations on heaths or calcareous grasslands	N	Y				U1	0	3	4	0	12		
Heaths & scrubs	1067	I	Lopinga achine	N			Y		U2	0	3	6	6	36		
Heaths & scrubs	1323	M	Myotis bechsteinii	N		Y	Y		XX	0	4	4	2	24	X	
Heaths & scrubs	1304	M	Rhinolophus ferrumequinum	N		Y	Y		U1	1	4	5	1	24	X	X
Heaths & scrubs	1074	I	Eriogaster catax	N		Y	Y		U1	2	4	4	1	20		X
Heaths & scrubs	4011	I	Bolbelasmus unicornis	N		Y	Y		XX	0	3	5	1	18	X	X
Heaths & scrubs	1050	I	Saga pedo	N			Y		XX	2	3	4	2	18		
Heaths & scrubs	1056	I	Parnassius mnemosyne	N			Y		U1	0	3	3	2	15	X	
Heaths & scrubs	1283	R	Coronella austriaca	N			Y		XX	0	3	3	1	12	X	
Heaths & scrubs	1363	M	Felis silvestris	N			Y		U2	0	2	3	3	12	X	
Heaths & scrubs	1307	M	Myotis blythii	N		Y	Y		U1	1	3	3	1	12	X	X
Heaths & scrubs	1303	M	Rhinolophus hipposideros	N		Y	Y		XX	3	4	3	0	12	X	X
Heaths & scrubs	1341	M	Muscardinus avellanarius	N			Y		XX	0	3	3	0	9	X	
Heaths & scrubs	1342	M	Dryomys nitedula	N			Y		U2	0	2	3	1	8	X	
Heaths & scrubs	1361	M	Lynx lynx	N		Y	Y		U2	0	2	3	0	6	X	
Heaths & scrubs	1076	I	Proserpinus proserpina	N			Y		XX	1	3	2	0	6		
Heaths & scrubs	1053	I	Zerynthia polyxena	N			Y		FV	0	3	1	1	6	X	
Heaths & scrubs	1352	M	Canis lupus	Y		Y	Y		U1	2	2	2	0	4	X	X
Heaths & scrubs	4014	I	Carabus variolosus	N		Y	Y		XX	0	2	2	0	4		

Heaths & scrubs	1078	I	Callimorpha quadripunctaria	Y		Y			FV	1	4	1	0	4	X	X
Mires & bogs	7230	H	Alkaline fens	N	Y				U2	0	3	5	3	24		
Mires & bogs	7140	H	Transition mires and quaking bogs	N	Y				U2	0	3	3	2	15		
Mires & bogs	4081	P	Cirsium brachycephalum	N		Y	Y		FV	0	4	4	3	28		
Mires & bogs	1428	P	Marsilea quadrifolia	N		Y	Y		U2	0	3	5	4	27		X
Mires & bogs	1188	A	Bombina bombina	N		Y	Y		U1	0	4	4	2	24	X	X
Mires & bogs	1059	I	Maculinea teleius	N		Y	Y		U1	0	4	4	2	24		
Mires & bogs	1993	A	Triturus dobrogicus	N		Y			U1	2	4	5	1	24	X	X
Mires & bogs	4096	P	Gladiolus palustris	N		Y	Y		U2	2	3	6	1	21		
Mires & bogs	1061	I	Maculinea nausithous	N		Y	Y		U1	0	3	4	3	21		
Mires & bogs	1214	A	Rana arvalis	N			Y		U1	0	3	4	3	21		
Mires & bogs	1207	A	Rana lessonae	N			Y		U1	0	3	4	3	21		
Mires & bogs	1617	P	Angelica palustris	N		Y	Y		U2	0	3	5	2	21		
Mires & bogs	1193	A	Bombina variegata	N		Y	Y		U1	0	4	4	1	20	X	
Mires & bogs	1725	P	Lindernia procumbens	N			Y		U1	2	3	4	2	18		
Mires & bogs	1037	I	Ophiogomphus cecilia	N		Y	Y		FV	2	4	3	1	16	X	X
Mires & bogs	1014	I	Vertigo angustior	N		Y			FV	0	4	4	0	16	X	
Mires & bogs	1330	M	Myotis mystacinus	N			Y		U1	1	3	3	2	15	X	
Mires & bogs	1040	I	Stylurus flavipes	N			Y		FV	2	3	4	1	15		
Mires & bogs	4045	I	Coenagrion ornatum	N		Y			FV	0	3	3	2	15	X	X
Mires & bogs	1614	P	Apium repens	N		Y	Y		U1	0	2	3	4	14		
Mires & bogs	4004	M	Microtus oeconomus mehelyi	Y		Y	Y		U2	0	2	3	4	14		
Mires & bogs	1201	A	Bufo viridis	N			Y		U1	0	3	3	1	12	X	
Mires & bogs	1203	A	Hyla arborea	N			Y		U1	0	3	3	1	12	X	
Mires & bogs	1292	R	Natrix tessellata	N			Y		XX	0	3	3	1	12	X	
Mires & bogs	1197	A	Pelobates fuscus	N			Y		U1	0	3	3	1	12	X	
Mires & bogs	1209	A	Rana dalmatina	N			Y		U1	1	3	3	1	12	X	
Mires & bogs	1303	M	Rhinolophus hipposideros	N		Y	Y		XX	3	4	3	0	12	X	X
Mires & bogs	4063	I	Sadleriana pannonica	N		Y	Y		U1	0	2	3	2	10		
Mires & bogs	1220	R	Emys orbicularis	N		Y	Y		FV	0	3	3	0	9	X	X
Mires & bogs	1042	I	Leucorrhinia pectoralis	N		Y	Y		U1	1	3	3	0	9		
Mires & bogs	1166	A	Triturus cristatus	N		Y	Y		U1	0	3	3	0	9		

Mires & bogs	5037	R	Lacerta vivipara pannonica	N			Y		U1	0	2	2	2	8		
Mires & bogs	1903	P	Liparis loeselii	N		Y	Y		U1	1	2	3	1	8		
Mires & bogs	1167	A	Triturus carnifex	N		Y	Y		U2	0	2	3	1	8		
Mires & bogs	1355	M	Lutra lutra	N		Y	Y		FV	2	4	2	0	8	X	X
Mires & bogs	1060	I	Lycaena dispar	N		Y	Y		U1	0	4	2	0	8	X	X
Mires & bogs	1082	I	Graphoderus bilineatus	N		Y	Y		U2	0	2	3	0	6		X
Mires & bogs	4064	I	Theodoxus transversalis	N		Y	Y		U1	0	2	2	1	6		X
Mires & bogs	4014	I	Carabus variolosus	N		Y	Y		XX	0	2	2	0	4		
Mires & bogs	4046	I	Cordulegaster heros	N		Y	Y		FV	0	2	2	0	4		
Mires & bogs	1516	P	Aldrovanda vesiculosa	N		Y	Y		U1	0	2	2	0	4		X
Mires & bogs	4027	I	Arytrura musculus	N		Y	Y		U1	0	2	2	0	4		X
Mires & bogs	1016	I	Vertigo moulinsiana	N		Y			FV	0	3	1	0	3	X	
Mires & bogs	4018	I	Duvalius hungaricus	N		Y	Y		FV	0	2	0	1	2		
Mires & bogs	1898	P	Eleocharis carniolica	N		Y	Y		FV	2	2	1	0	2	X	
Mires & bogs	1337	M	Castor fiber	N		Y	Y		FV	5	3	0	0	0		
Rivers & lakes	3260	H	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	N	Y				U2	0	4	6	1	28	X	X
Rivers & lakes	3150	H	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	N	Y				U1	0	4	5	1	24	X	X
Rivers & lakes	3270	H	Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation	N	Y				U1	0	4	6	0	24	X	X
Rivers & lakes	3130	H	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	N	Y				U1	0	4	5	0	20	X	X
Rivers & lakes	3160	H	Natural dystrophic lakes and ponds	N	Y				U2	0	3	4	2	18	X	X
Rivers & lakes	3140	H	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	N	Y				XX	0	2	2	0	4	X	X
Rivers & lakes	1032	I	Unio crassus	N		Y	Y		FV	1	4	5	2	28	X	

Rivers & lakes	1428	P	Marsilea quadrifolia	N		Y	Y		U2	0	3	5	4	27		X
Rivers & lakes	1318	M	Myotis dasycneme	N		Y	Y		U1	1	4	4	1	20		
Rivers & lakes	2522	F	Pelecus cultratus	N		Y			XX	0	4	5	0	20	X	X
Rivers & lakes	1159	F	Zingel zingel	N		Y		Y	XX	0	4	5	0	20	X	X
Rivers & lakes	4056	I	Anisus vorticulus	N		Y	Y		FV	0	4	4	0	16	X	X
Rivers & lakes	2555	F	Gymnocephalus baloni	N		Y	Y		FV	0	4	4	0	16	X	X
Rivers & lakes	1157	F	Gymnocephalus schraetzer	N		Y		Y	U1	0	4	4	0	16	X	X
Rivers & lakes	1037	I	Ophiogomphus cecilia	N		Y	Y		FV	2	4	3	1	16	X	X
Rivers & lakes	1160	F	Zingel streber	N		Y			U1	0	4	4	0	16	X	X
Rivers & lakes	1320	M	Myotis brandtii	N			Y		XX	1	3	3	2	15		
Rivers & lakes	1040	I	Stylurus flavipes	N			Y		FV	2	3	4	1	15		
Rivers & lakes	4045	I	Coenagrion ornatum	N		Y			FV	0	3	3	2	15	X	X
Rivers & lakes	1203	A	Hyla arborea	N			Y		U1	0	3	3	1	12	X	
Rivers & lakes	1292	R	Natrix tessellata	N			Y		XX	0	3	3	1	12	X	
Rivers & lakes	1122	F	Gobio uranoscopus	N		Y			XX	0	3	3	1	12		
Rivers & lakes	2011	F	Umbra krameri	N		Y			U1	0	3	3	1	12	X	X
Rivers & lakes	1149	F	Cobitis taenia	N		Y			FV	0	4	3	0	12	X	X
Rivers & lakes	1145	F	Misgurnus fossilis	N		Y			FV	1	4	3	0	12	X	X
Rivers & lakes	4063	I	Sadleriana pannonica	N		Y	Y		U1	0	2	3	2	10		
Rivers & lakes	1314	M	Myotis daubentonii	N			Y		XX	3	3	2	1	9	X	
Rivers & lakes	1220	R	Emys orbicularis	N		Y	Y		FV	0	3	3	0	9	X	X
Rivers & lakes	2511	F	Gobio kessleri	N		Y			XX	0	3	3	0	9		X
Rivers & lakes	1042	I	Leucorrhinia pectoralis	N		Y	Y		U1	1	3	3	0	9		
Rivers & lakes	1355	M	Lutra lutra	N		Y	Y		FV	2	4	2	0	8	X	X
Rivers & lakes	1134	F	Rhodeus sericeus amarus	N		Y			FV	2	4	2	0	8	X	X
Rivers & lakes	6158	F	Gobio albipinnatus	N		Y			FV	0	3	2	0	6	X	X
Rivers & lakes	1082	I	Graphoderus bilineatus	N		Y	Y		U2	0	2	3	0	6		X
Rivers & lakes	4064	I	Theodoxus transversalis	N		Y	Y		U1	0	2	2	1	6		X
Rivers & lakes	1146	F	Sabanejewia aurata	N		Y			FV	1	3	2	0	6	X	X
Rivers & lakes	4046	I	Cordulegaster heros	N		Y	Y		FV	0	2	2	0	4		
Rivers & lakes	1163	F	Cottus gobio	N		Y			U1	0	2	2	0	4		
Rivers & lakes	1105	F	Hucho hucho	N		Y		Y	XX	0	2	2	0	4		
Rivers & lakes	5345	F	Rutilus virgo	N		Y		Y	XX	0	2	2	0	4		

Rivers & lakes	1516	P	Aldrovanda vesiculosa	N		Y	Y		U1	0	2	2	0	4		X
Rivers & lakes	1130	F	Aspius aspius	N		Y			FV	2	4	1	0	4	X	X
Rivers & lakes	1138	F	Barbus meridionalis	N		Y		Y	FV	0	2	1	0	2		
Rivers & lakes	1337	M	Castor fiber	N		Y	Y		FV	5	3	0	0	0		
Sparsely vegetated land	8160	H	Medio-European calcareous scree of hill and montane levels	Y	Y				FV	0	3	2	0	6		
Sparsely vegetated land	8310	H	Caves not open to the public	N	Y				U1	1	3	2	0	6	X	X
Sparsely vegetated land	8210	H	Calcareous rocky slopes with chasmophytic vegetation	N	Y				FV	0	3	1	0	3	X	
Sparsely vegetated land	8220	H	Siliceous rocky slopes with chasmophytic vegetation	N	Y				FV	0	3	1	0	3	X	
Sparsely vegetated land	8230	H	Siliceous rock with pioneer vegetation of the Sedo-Scleranthion or of the Sedo albi-Veronicion dillenii	N	Y				FV	0	3	1	0	3	X	X
Sparsely vegetated land	8150	H	Medio-European upland siliceous screes	N	Y				FV	0	2	0	0	0		
Sparsely vegetated land	4075	P	Dianthus lumnitzeri	Y		Y	Y		U2	0	3	4	2	18		
Sparsely vegetated land	1329	M	Plecotus austriacus	N			Y		U1	1	3	4	2	18	X	
Sparsely vegetated land	1058	I	Maculinea arion	N			Y		U2	0	2	4	3	14	X	
Sparsely vegetated land	1283	R	Coronella austriaca	N			Y		XX	0	3	3	1	12	X	
Sparsely vegetated land	4055	I	Stenobothrus eurasius	N		Y	Y		U1	0	2	2	4	12		
Sparsely vegetated land	5365	M	Pipistrellus savii	N			Y		FV	2	3	2	0	6	X	
Sparsely vegetated land	1261	R	Lacerta agilis	N			Y		XX	0	3	1	0	3	X	
Sparsely vegetated land	1332	M	Vespertilio murinus	N			Y		XX	3	3	1	0	3		
Sparsely vegetated land	2016	M	Pipistrellus kuhlii	N			Y		FV	2	2	1	0	2	X	
Sparsely vegetated land	1256	R	Podarcis muralis	N			Y		XX	0	2	1	0	2	X	

Appendix 3. List of species and habitats types occurring only in Bulgaria and/or Romania

N2K_code	Description	Priority	I	II	IV	V	BLS-BG	BLS-RO	STE-RO	CON-BG	CON-RO	PAN-RO	MBLS-BG	MBLS-RO
1160	Large shallow inlets and bays	N	Y				X	X						
1150	Coastal lagoons	Y	Y				X	X						
1530	Pannonic salt steppes and salt marshes	Y	Y						X					
31A0	Transylvanian hot-spring lotus beds	Y	Y									X		
40C0	Ponto-Sarmatic deciduous thickets	Y	Y						X	X	X			
62C0	Ponto-Sarmatic steppes	Y	Y				X		X	X	X			
62D0	Oro-Moesian acidophilous grasslands	N	Y							X				
91M0	Pannonian-Balkanic turkey oak – sessile oak forests	N	Y							X	X			
91S0	Western Pontic beech forests	Y	Y				X							
91X0	Dobrogean beech forests	Y	Y						X					
91V0	Dacian Beech forests (Symphyto-Fagion)	N	Y								X			
91W0	Moesian beech forests	N	Y							X				
91Y0	Dacian oak & hornbeam forests	N	Y						X		X			
91Z0	Moesian silver lime woods	N	Y				X			X				
91AA	Eastern white oak woods	Y	Y				X		X	X	X			
91BA	Moesian silver fir forests	N	Y							X				
91CA	Rhodopide and Balkan Range Scots pine forests	N	Y							X				
92A0	Salix alba and Populus alba galleries	N	Y									X		
92C0	Platanus orientalis and Liquidambar orientalis woods	N	Y							X				

	(Platanion orientalis)													
92D0	Southern riparian galleries and thickets (Nerio-Tamaricetea and Securinegion tinctoriae)	N	Y					**X**	**X**	**X**				
9560	Endemic forests with Juniperus spp.	Y	Y							**X**				
5288	Alburnus mandrensis	N		Y			**X**							
5291	Alburnus sarmaticus	N		Y			**X**							
5290	Alburnus schischkovi	N		Y			**X**							
4125	Alosa immaculata	N		Y		Y	**X**			**X**				
4126	Alosa maeotica	N		Y		Y		**X**	**X**		**X**			
2491	Alosa pontica	N		Y		Y					**X**			
4127	Alosa tanaica	N		Y		Y	**X**	**X**	**X**					
2132	Astragalus peterfii	N		Y	Y						**X**			
5265	Barbus bergi	N		Y		Y	**X**			**X**				
5263	Barbus strumicae	N		Y		Y				**X**				
2236	Campanula romanica	N		Y	Y				**X**					
4070	Campanula serrata	N		Y	Y						**X**			
4080	Centaurea immanuelis-loewii	N		Y	Y					**X**				
2253	Centaurea jankae	N		Y	Y				**X**	**X**				
2255	Centaurea pontica	N		Y	Y			**X**						
1286	Coluber najadum	N			Y					**X**				
1228	Cyrtopodion kotschyi	N			Y		**X**			**X**				
4103	Dactylorhiza kalopissii	N		Y	Y					**X**				
1350	Delphinus delphis	N			Y		**X**							
1293	Elaphe situla	N		Y	Y		**X**			**X**				
1277	Eryx jaculus	N			Y					**X**				
1845	Fritillaria gussichiae	N			Y					**X**				
2191	Galium moldavicum	N		Y	Y						**X**			
6158	Gobio vladykovi	N		Y				**X**	**X**	**X**	**X**	**X**		
5365	Hypsugo savii	N			Y		**X**			**X**				

1251	Lacerta trilineata	N			Y		**X**			**X**				
1222	Mauremys caspica	N		Y	Y		**X**			**X**				
2609	Mesocricetus newtoni	N		Y	Y		**X**		**X**	**X**				
2079	Moehringia jankae	N		Y	Y				**X**	**X**				
1356	Mustela lutreola	N		Y	Y			**X**	**X**					
2617	Myomimus roachi	N		Y	Y		**X**			**X**				
4039	Nymphalis vaualbum	N		Y	Y					**X**	**X**	**X**		
1269	Ophisaurus apodus	N			Y		**X**			**X**				
1268	Ophisops elegans	N			Y					**X**				
1904	Ophrys argolica	N			Y		**X**							
1200	Pelobates syriacus	N			Y		**X**			**X**				
1351	Phocoena phocoena	N		Y	Y								**X**	**X**
1238	Podarcis erhardii	N			Y					**X**				
2125	Potentilla emilii-popii	N		Y	Y		**X**		**X**	**X**				
4023	Propomacrus cypriacus	N		Y	Y		**X**			**X**				
4043	Pseudophilotes bavius	N		Y	Y				**X**		**X**			
1208	Rana graeca	N			Y					**X**				
1306	Rhinolophus blasii	N		Y	Y		**X**			**X**	**X**			
1302	Rhinolophus mehelyi	N		Y	Y		**X**		**X**	**X**	**X**			
1998	Romanichthys valsanicola	N		Y	Y						**X**			
1371	Rupicapra rupicapra balcanica	N		Y	Y					**X**				
2318	Stipa danubialis	N		Y	Y						**X**			
1219	Testudo graeca	N		Y	Y		**X**	**X**	**X**	**X**				
4116	Tozzia carpathica	N		Y	Y					**X**				
1171	Triturus karelinii	N		Y	Y		**X**			**X**				
4008	Triturus vulgaris ampelensis	N		Y	Y						**X**			
2300	Tulipa hungarica	N		Y	Y						**X**			
1349	Tursiops truncatus	N		Y	Y								**X**	**X**
2635	Vormela peregusna	N		Y	Y		**X**		**X**	**X**				