Red List of the Carpathian Non-forest Biotopes (Habitats)

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Introduction

In 2008 the International Union for the Conservation of Nature (IUCN) initiated development of a global Red List of ecosystems (Resolution 4.020, IV World Conservation Congress in Barcelona, Spain, 2008). The IUCN Red List of Ecosystems is planned to be a global standard for how to assess the status of ecosystems, applicable at local, national, regional and global levels.

The first global consultation paper on the development of categories and criteria for a red list of ecosystems was published in 2011 (Rodríguez et al. 2011). More recently, a manuscript (Keith et al.) on the scientific foundations for an IUCN Red List for Ecosystems has been submitted to a peer-review for a scientific journal. This document is based on the manuscript of Keith et al., which summarizes the scientific advances of the consultation process, presents a portfolio of case studies, and introduces the next version of the Red List categories and criteria for threatened ecosystems. It is expected that this version will not change considerably in the peer-review process, and that it will be proposed to IUCN Council for formal adoption of categories and criteria in 2013 (Rodríguez et al. 2012).

The term “ecosystem types” is used by Rodríguez et al. (2011) and by Keith et al. (unpublished) for units of assessments that represent complexes of organisms and their associated physical environment within an area (Tansley, 1935). The authors regard other terms applied in conservation assessments, such as “biotopes” and “habitats”, as operational synonyms of “ecosystems”.

The publication “Red List Assessment of European Habitat Types” (Rodwell et al., 2013), presents the survey of recent projects aimed at elaboration of red list of habitats in Europe and brings information dealing with trends, methodological approaches and outcomes of them.

Geographic scope

The boundaries of the Carpathians as proposed for the purpose of this assessment are shown in Fig. 1. This map was used in previous projects for development of the Carpathian Biodiversity Information System (CBIS), this includes borders of 309 orographic units and the organisation of data collection can be compatible with previous Carpathian projects. This can

serve as a basis for data gathering and display the species distribution, and is available on www.carpates.org/cbis/orogs.html. The details and GIS layers will be provided by the specialists for data processing.

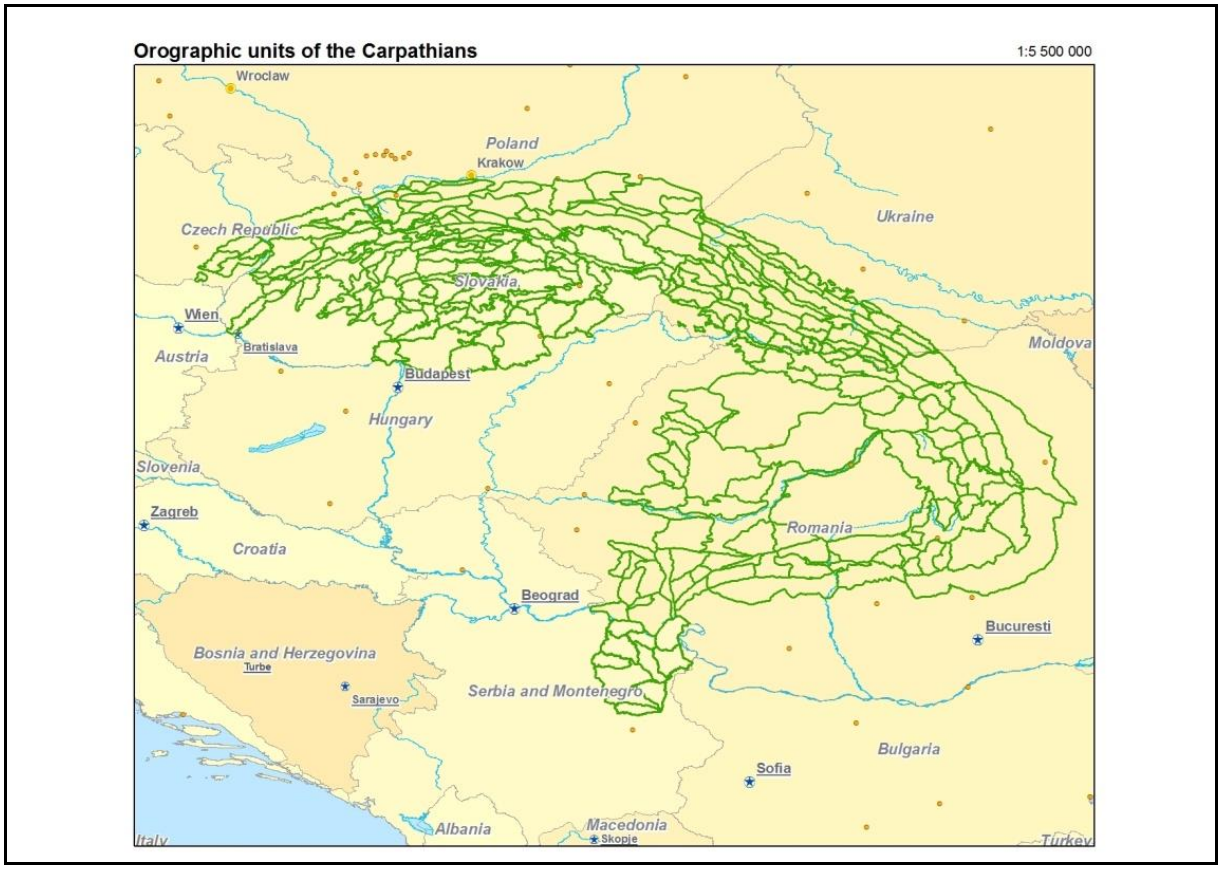

Fig. 1 Map of the Carpathian eco-region as used in the CBIS

Categories for red listing of biotopes (habitats)

Assessment of non-forest biotopes (habitats) has been methodologically based on works published in several European countries e.g. the Czech Republic (Kučera, 2005) Germany (Riecken et al., 2006,), Finland (Biodiversity FI, 2009) or Norway (Lindgaard, Henriksen, 2011).

Publications focused on classification, characteristic and evaluation of biotopes (habitats) in the Carpathian region and its surroundings as (Ružičková, et al., 1996, Chytrý et al., 2001, Stanová, Valachovič, 2002, Háková et al., 2004, Dančák, 2006) and also the red lists of species in the Carpatian region (e.g. Witkowski et al., 2003) have been used as well.

IUCN methods of the assessment of threatened species and IUCN criteria used for red list of threatened ecosystems (Rodríguez et al., 2011) were adjusted in the process of classification and evaluation of threatened non-forest biotopes (habitats).

The proposed IUCN Red List categories for non-forest biotopes (habitats) are almost the same as are used by the IUCN for the assessment of species (IUCN, 2001). A schematic of the categories and their relation can be found in Fig. 2. The threatened biotopes (habitats) are categorized either as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU). Biotopes (habitats) that just fail to meet the criteria of the threatened categories are classified

Near Threatened (NT) and ecosystems that unambiguously meet none of the criteria are Least Concern (LC). Biotopes (habitats) that are in a state of their ecological optima and are without endangering, are classified as Ecologically Satisfactory (ES). Analogous to the species categories, an additional category Data Deficient (DD) is given to biotopes (habitats) for which too few data exist to apply any criterion.

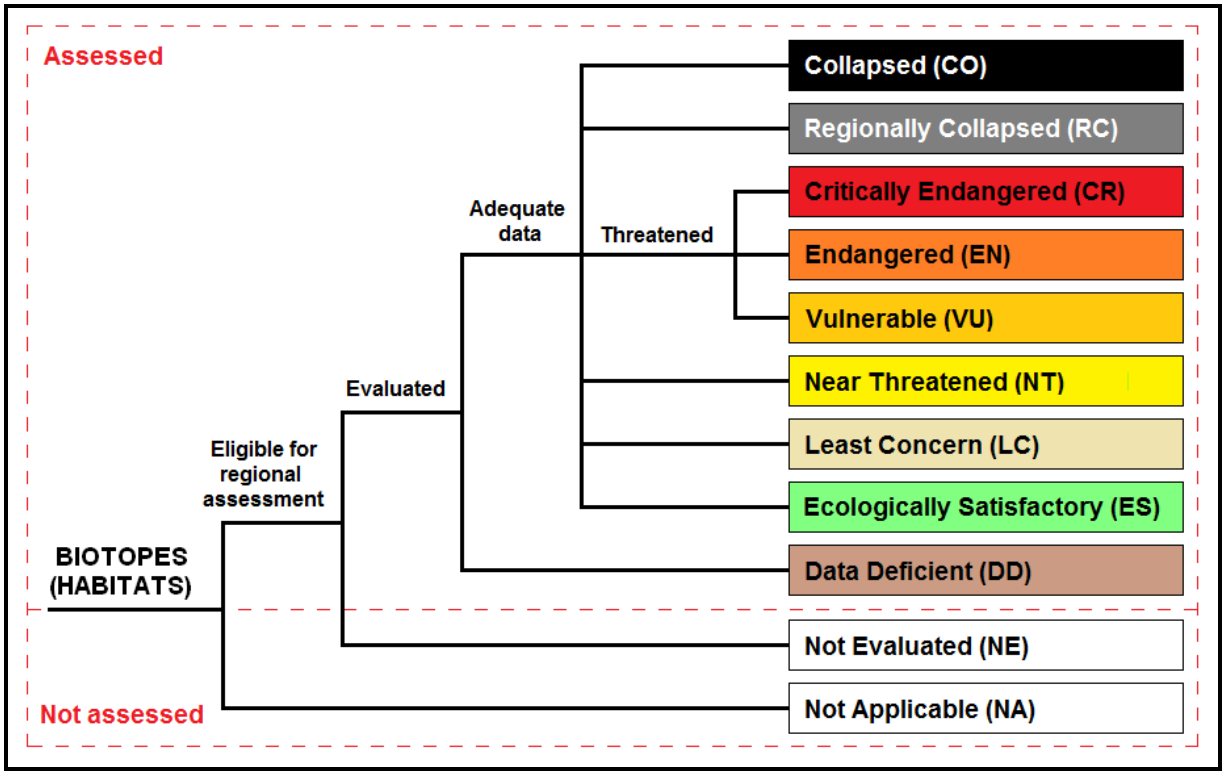

Fig. 2 Structure of the proposed IUCN Red List categories for non-forest biotopes (habitats) in the Carpathians by Barančok et al. (unpublished)

Biotopes (habitats) that have collapsed throughout their distribution are categorized Collapsed (CO), which corresponds to the category Extinct in species assessments. For biotopes (habitats), which would have collapsed only in the region, we allocated category Regionally Collapsed (RC). Biotopes (habitats) in the territory of the Carpathians that have not been evaluated at all belong to the category Not Evaluated (NE). Biotopes (habitats), which are not included in the territory of the Carpathians, are classified Not Applicable (NA).

Table 1 Definitions of Red List categories

CATEGORY		DEFINITION
CO	Collapsed	Biotope (habitat) world-widely disappeared or natural conditions, biotic interactions and species composition have been changed as much that it is not possible to classify this "new" ecosystem as original biotopes (habitats) any more.
RC	Regionally Collapsed	Biotope (habitat) not observed longer time in the Carpathians (or particular country) on regional level does not exist. The natural recovering is not possible on regional level, crucial species of the biotope (habitat) disappeared in the region and there is low probability of their comeback and/or changes of natural conditions do not allow the existence of the biotope (habitat) in the region.
CR	Critically Endangered	Biotope (habitat) is critically endangered if available data meets

		any criteria of this category from A to G. Extremely high probability of serious endangerment in following 50 to 100 years in the Carpathian region.
EN	Endangered	Biotope (habitat) is endangered if available data meets any criteria of this category from A to G. Biotope (habitat) is facing to high risk of endangerment in the period from 50 to 100 years.
VU	Vulnerable	Biotope (habitat) is vulnerable if available data meet any criteria from A to G of category of vulnerability. Biotope (habitat) is facing to moderately high risk of vulnerability in the period from 50 to 100 years.
NT	Near Threatened	Biotope (habitat) is near threatened when the available data meet at least one of the criteria A to G of Near Threatened. Recently it does not meet any of the criteria for CR, EN or VU, but in the future may do.
LC	Least Concern	Biotope (habitat) is least concerned when it unambiguously meets none of the criteria for the threatened categories CR, EN, VU or NT.
ES	Ecologically Satisfactory	Biotope (habitat) belongs to the ecologically satisfactory category when it fails to meet any of the criteria for CR, EN, VU or NT, and is not placed in the DD, NA or NE categories. Ecologically satisfactory means that a substantial proportion of the biotope (habitat) objects are in a very good or good ecological state and the biotope (habitat) is sufficiently large (total surface area), occurs in enough areas and has a large enough breadth of occurrence to resist any external impacts without the risk of significant changes in its natural occurrence and character (or long-term, human-induced occurrence and character in the case of semi-natural sites).
DD	Data Deficient	Biotope (habitat) is placed in the data deficient category when it is very uncertain which category is correct and the appropriate category clearly includes the entire range from CR to ES, inclusive. Biotope (habitat) is DD when there is inadequate information to make a direct, or indirect, assessment according to the Red List criteria. Data Deficient is therefore not a category of threat. Listing of biotope (habitat) in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate.
NE	Not Evaluated	This category includes biotopes (habitats) occurred in the area of the Carpathian region but they are not evaluated in terms of their vulnerability and rareness for the needs of the Red List. It includes particularly artificial biotopes (habitats), e.g. biotopes of ruderal and segetal vegetation, agricultural cultures, biotopes of urban environment etc. Also biotopes (habitats) with no relevant data concerning their character can be included here.
NA	Not Applicable	Biotope (habitat) belongs to the not applicable category when it is deemed irrelevant for evaluation at the national or regional level. These biotopes (habitats) do not occur in a given area.

Categories for regional assessment are shown in Fig. 2. Final version of the Carpathian Red List will be the result of a scientific consensus reached by chosen experts. It will be publicised on BIOREGIO and Carpathian Convention website for following discussion and updating.

Criteria for red listing of biotopes (habitats) – the Carpathian region

We proposed seven types of criteria for the assessment of non-forest Carpathian biotopes (habitats) on the base of: recently published works (above mentioned and commented), knowledge about character and distribution of assessed non-forest biotopes (habitats) and knowledge of recent partial assessment used in several studies focused on biotopes (habitats) classification, evaluation of its favourable condition or human impacts appraisal (Barančok et al., 2013):

Criterion A. Reduction in area (Decline in distribution)
Criterion B. Restricted distribution
Criterion C. Very rare occurrence
Criterion D. Disruption of natural conditions (Environmental degradation)
Criterion E. Disruption of biotic interactions
Criterion F. Disruption of biotope favourable status
Criterion G. Quantitative estimates of risk of biotope collapse

It will be impossible to use particular criteria for some biotopes (habitats), because for the evaluation there won't be available sufficient data. In such case criterion will be evaluated as DD (Data Deficient).

The biotope (habitat) can be classified to following threats categories (in compliance to A – G criteria):

- if biotope (habitat) is evaluated according to any criteria as CR (Critically Endangered) all in all it will be classified as CR (Critically Endangered);
- if biotope (habitat) is evaluated according to any criteria as EN (Endangered) all in all it will be classified as EN (Endangered);
- if biotope (habitat) is evaluated according to any criteria as VU (Vulnerable) all in all it will be classified as VU (Vulnerable);
- if biotope (habitat) is evaluated according to any criteria as NT (Near Threatened) all in all it will be classified as NT (Near Threatened);
- the biotope (habitat) can be classified into categories LC (Least Concern) or ES (Ecologically Satisfactory), only if it is not classified within NT, VU, EN or CR other category.

The biotopes (habitats), not occurred in the Carpathian region due to the character of natural conditions, are classified in category NA (Not Applicable). The biotopes (habitats) occurred in the region but not included within the frame of threats evaluation are classified as NE (Not Evaluated).

Database structure of biotopes (habitats) – the Carpathian region

Has been designed following the structure of the database:

- Name of biotope (habitat)
- Red List Category
- Syntaxonomy
- Characteristics
- Basic species composition
- Protected, rare, endangered and endemic plant species
- Significance for fauna – protected, rare, endangered and endemic animal species
- Distribution
- Important localities (areas) of occurrence

- Map of distribution
- Current conservation
- Threats, risk factors
- Draft (project) of protection / management
- Assessment procedure and criteria for red listing
- Photodocumentation
- References
- Comments
- Date of assessment
- Person of data processing

Results and Discussion

In the following territory of the Carpathian region were evaluated a total of 254 types and subtypes of habitats. There were evaluated data processed for the Slovakia, Czech Republic, Poland, Ukraine and Romania. Overview of the evaluation of habitats is given in Table 3. Representation of different habitats under threat classification into categories is summarized in Table 2. There are the data for individual countries and synthesis data from evaluation habitats in the Carpathian region.

In the whole Carpathian region was allocated 171 types and subtypes of habitats (Table 4). In individual categories were allocated: CR (Critically Endangered) – 13 habitats, EN (Endangered) – 28 habitats, VU (Vulnerable) – 70 habitats, NT (Near Threatened) – 46 habitats, LC (Least Concern) – 8 habitats and EC (Ecologically Satisfactory) – 6 habitats.

This evaluation cannot be considered final and comprehensive. Hungary and Serbia data were not available. Romania data were processed only some partial information.

Table 2 Table of habitats representation according to Carpathian countries and Red List categories

Country		CR	EN	VU	NT	LC	ES		SUM
Czech		1	3	18	14	8	0		44
Hungary	*								
Poland		4	4	7	0	4	0		19
Romania		2	8	16	9	0	1		36
Serbia	*								
Slovakia		10	19	28	38	5	3		103
Ukraine		0	9	26	6	3	8		52
SUM		17	43	95	67	20	12		254
Carpathian region		13	28	70	46	8	6		171

* data not been provided

Table 3 Overview of habitats in the Carpathian region

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
C1.1 - Permanent oligotrophic lakes, ponds and pools	3130 - Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	SK	CR	Barančok Peter
C1.14 - Charophyte submerged carpets in oligotrophic waterbodies	3140 - Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	SK	VU	Barančok Peter
C1.14 - Charophyte submerged carpets in oligotrophic waterbodies	3140 - Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	CZ	VU	Lustyk Pavel
C1.2 - Permanent mesotrophic lakes, ponds and pools	3130 - Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	SK	EN	Barančok Peter
C1.32 - Free-floating vegetation of eutrophic waterbodies	3150 - Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	SK	NT	Barančok Peter
C1.33 - Rooted submerged vegetation of eutrophic waterbodies	3150 - Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	SK	VU	Barančok Peter
C1.33 - Rooted submerged vegetation of eutrophic waterbodies	3150 - Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	CZ	VU	Lustyk Pavel
C1.34 - Rooted floating vegetation of eutrophic waterbodies	3150 - Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	SK	EN	Barančok Peter
C1.341 - Shallow-water floating communities	3150 - Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	CZ	VU	Lustyk Pavel
C1.4 - Permanent dystrophic lakes, ponds and pools	3160 - Natural dystrophic lakes and ponds	PL	CR	Szewczyk Monika
C1.4 - Permanent dystrophic lakes, ponds and pools	3160 - Natural dystrophic lakes and ponds	RO	CR	Barančok Peter
C1.45 - Peatmoss and [Utricularia] communities of dystrophic waterbodies	3160 - Natural dystrophic lakes and ponds	SK	CR	Barančok Peter
C2.11 - Soft water springs	Unclassified	UA	ES	Voloshchuk Mykola
C2.11 - Soft water springs	Unclassified	CZ	VU	Lustyk Pavel
C2.11 - Soft water springs	Unclassified	SK	NT	Barančok Peter

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
C2.121 - Petrifying springs with tufa or travertine formations	7220 - Petrifying springs with tufa formation (Cratoneurion)	PL	CR	Szewczyk Monika
C2.121 - Petrifying springs with tufa or travertine formations	7220 - Petrifying springs with tufa formation (Cratoneurion)	SK	CR	Barančok Peter
C2.121 - Petrifying springs with tufa or travertine formations	7220 - Petrifying springs with tufa formation (Cratoneurion)	RO	EN	Barančok Peter
C2.121 - Petrifying springs with tufa or travertine formations	7220 - Petrifying springs with tufa formation (Cratoneurion)	CZ	VU	Lustyk Pavel
C2.2 - Permanent non-tidal, fast, turbulent watercourses	3260 - Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	SK	NT	Barančok Peter
C2.3 - Permanent non-tidal, smooth-flowing watercourses	3260 - Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	SK	NT	Barančok Peter
C2.3 - Permanent non-tidal, smooth-flowing watercourses	3260 - Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	CZ	EN	Lustyk Pavel
C2.6 - Beds of rivers and streems; C2.7 - Riverine islets	Unclassified	SK	EN	Barančok Peter
C2.6 - Films of water flowing over rocky watercourse margins	Unclassified	UA	ES	Voloshchuk Mykola
C2.6 - Films of water flowing over rocky watercourse margins	Unclassified	SK	VU	Barančok Peter
C3.1 - Species-rich helophyte beds	Unclassified	CZ	LC	Lustyk Pavel
C3.1 - Species-rich helophyte beds	Unclassified	SK	LC	Barančok Peter
C3.2 - Water-fringing reedbeds and tall helophytes other than canes	Unclassified	CZ	NT	Lustyk Pavel
C3.2 - Water-fringing reedbeds and tall helophytes other than canes	Unclassified	SK	NT	Barančok Peter
C3.231 - [Typha latifolia] beds	Unclassified	UA	EN	Voloshchuk Mykola
C3.24 - Medium-tall non-graminoid waterside communities	Unclassified	CZ	VU	Lustyk Pavel

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
C3.26 - [Phalaris arundinacea] beds	Unclassified	CZ	NT	Lustyk Pavel
C3.26 - [Phalaris arundinacea] beds	Unclassified	SK	NT	Barančok Peter
C3.29 - Water-fringing large sedge communities	7110 - Active raised bogs	UA	VU	Voloshchuk Mykola
C3.4 - Species-poor beds of low-growing water-fringing or amphibious vegetation	Unclassified	SK	NT	Barančok Peter
C3.41 - Euro-Siberian perennial amphibious communities	3130 - Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	SK	VU	Barančok Peter
C3.41 - Euro-Siberian perennial amphibious communities	3130 - Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	CZ	NT	Lustyk Pavel
C3.51 - Euro-Siberian dwarf annual amphibious swards	3130 - Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	SK	VU	Barančok Peter
C3.53 - Euro-Siberian annual river mud communities	3270 - Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation	SK	NT	Barančok Peter
C3.53 - Euro-Siberian annual river mud communities	3270 - Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation	CZ	VU	Lustyk Pavel
C3.55 - Sparsely vegetated river gravel banks	3220 - Alpine rivers and the herbaceous vegetation along their banks	SK	NT	Barančok Peter
C3.55 - Sparsely vegetated river gravel banks	3220 - Alpine rivers and the herbaceous vegetation along their banks	CZ	NT	Lustyk Pavel
C3.55 - Sparsely vegetated river gravel banks	3220 - Alpine rivers and the herbaceous vegetation along their banks	CZ	EN	Lustyk Pavel
C3.551 - Boreo-alpine stream gravel habitats	3220 - Alpine rivers and the herbaceous vegetation along their banks	RO	NT	Barančok Peter
C3.552 - Montane river gravel habitats	3220 - Alpine rivers and the herbaceous vegetation along their banks	RO	NT	Barančok Peter
D1.11 - Active, relatively undamaged raised bogs	7110 - Active raised bogs	PL	EN	Szewczyk Monika
D1.11 - Active, relatively undamaged raised bogs	7110 - Active raised bogs	RO	EN	Barančok Peter

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
D1.11 - Active, relatively undamaged raised bogs	7110 - Active raised bogs	UA	VU	Voloshchuk Mykola
D1.11 - Active, relatively undamaged raised bogs	7110 - Active raised bogs	SK	CR	Barančok Peter
D1.111 - Raised bog hummocks, ridges and lawns	7110 - Active raised bogs	SK	CR	Barančok Peter
D1.11111 - [Sphagnum magellanicum] hummocks	7130 - Blanket bogs (* if active bog)	UA	VU	Voloshchuk Mykola
D1.11112 - [Sphagnum fuscum] hummocks	7110 - Active raised bogs	UA	VU	Voloshchuk Mykola
D1.11126 - [Eriophorum-Sphagnum fuscum] lawns	7110 - Active raised bogs	UA	VU	Voloshchuk Mykola
D1.1112A - [Eriophorum-Sphagnum magellanicum] lawns	7110 - Active raised bogs	UA	VU	Voloshchuk Mykola
D1.11133 - Crowberry shrub hummocks	4060 - Alpine and Boreal heaths	UA	VU	Voloshchuk Mykola
D1.11134 - [Vaccinium] shrub hummocks	4060 - Alpine and Boreal heaths	UA	EN	Voloshchuk Mykola
D1.112 - Raised bog hollows (schlenken)	7110 - Active raised bogs	SK	CR	Barančok Peter
D1.12 - Damaged, inactive bogs	7120 - Degraded raised bogs still capable of natural regeneration	PL	LC	Szewczyk Monika
D1.12 - Damaged, inactive bogs	7120 - Degraded raised bogs still capable of natural regeneration	SK	EN	Barančok Peter
D1.121 - Damaged, inactive bogs, dominated by dense [Molinia]	7120 - Degraded raised bogs still capable of natural regeneration	RO	VU	Barančok Peter
D1.123 - Ditched raised bogs	7120 - Degraded raised bogs still capable of natural regeneration	SK	EN	Barančok Peter
D2.3 - Transition mires and quaking bogs	7140 - Transition mires and quaking bogs	PL	VU	Szewczyk Monika
D2.3 - Transition mires and quaking bogs	7140 - Transition mires and quaking bogs	SK	EN	Barančok Peter

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
D2.3 - Transition mires and quaking bogs	7140 - Transition mires and quaking bogs	CZ	VU	Lustyk Pavel
D2.3 - Transition mires and quaking bogs	7140 - Transition mires and quaking bogs	CZ	EN	Lustyk Pavel
D2.3 - Transition mires and quaking bogs	7150 - Depressions on peat substrates of the Rhynchosporion	RO	VU	Barančok Peter
D2.33 - [Carex rostrata] quaking mires	7140 - Transition mires and quaking bogs	UA	VU	Voloshchuk Mykola
D2.3C - [Eriophorum vaginatum] quaking bogs	7110 - Active raised bogs	UA	VU	Voloshchuk Mykola
D2.3H - Wet, open, acid peat and sand, with [Rhynchospora alba] and [Drosera]	7150 - Depressions on peat substrates of the Rhynchosporion	UA	VU	Voloshchuk Mykola
D4.1 - Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	7230 - Alkaline fens	SK	EN	Barančok Peter
D4.1 - Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	7230 - Alkaline fens	RO	VU	Barančok Peter
D4.1 - Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	7230 - Alkaline fens	CZ	VU	Lustyk Pavel
D4.134 - Carpathian Davall sedge fens	7230 - Alkaline fens	PL	VU	Szewczyk Monika
D4.1C - [Carex rostrata] alkaline fens	7110 - Active raised bogs	UA	VU	Voloshchuk Mykola
D4.1N16 - Carpathian oriental leopardsbane communities	7110 - Active raised bogs	UA	VU	Voloshchuk Mykola
D4.2 - Basic mountain flushes and streamsides, with a rich arctic-montane flora	7240 - Alpine pioneer formations of the Caricion bicoloris-atrofuscae	RO	VU	Barančok Peter
D5.21 - Beds of large [Carex] spp.	7140 - Transition mires and quaking bogs	UA	EN	Voloshchuk Mykola
D5.21 - Beds of large [Carex] spp.	Unclassified	SK	NT	Barančok Peter
D5.24 - Fen [Cladium mariscus] beds	7210 - Calcareous fens with Cladium mariscus and species of the Caricion davallianae	RO	EN	Barančok Peter

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
D5.24 - Fen [Cladium mariscus] beds	7210 - Calcareous fens with Cladium mariscus and species of the Caricion davallianae	SK	CR	Barančok Peter
D6.11 - Interior European [Puccinellia distans] meadows	1340 - Inland salt meadows	SK	EN	Barančok Peter
D6.14 - Swards of Carpathian travertine concretions	1340 - Inland salt meadows	SK	CR	Barančok Peter
E1.11 - Euro-Siberian rock debris swards	6110 - Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi	CZ	NT	Lustyk Pavel
E1.11 - Euro-Siberian rock debris swards	8230 - Siliceous rock with pioneer vegetation of the Sedo-Scleranthion or of the Sedo albi-Veronicion dillenii	SK	NT	Barančok Peter
E1.12 - Euro-Siberian pioneer calcareous sand swards	6120 - Xeric sand calcareous grasslands	SK	EN	Barančok Peter
E1.22 - Arid subcontinental steppic grassland ([Festucion valesiacae])	6210 - Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	SK	VU	Barančok Peter
E1.22 - Arid subcontinental steppic grassland ([Festucion valesiacae])	6210 - Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	CZ	NT	Lustyk Pavel
E1.23 - Meso-xerophile subcontinental meadow-steppes ([Cirsio-Brachypodion])	6210 - Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	SK	NT	Barančok Peter
E1.28 - Central European calcaro-siliceous grassland	6210 - Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	SK	NT	Barančok Peter
E1.29 - [Festuca pallens] grassland	6190 - Rupicolous pannonic grasslands (Stipo-Festucetalia pallentis)	CZ	NT	Lustyk Pavel
E1.29 - [Festuca pallens] grassland	6240 - Sub-Pannonic steppic grasslands	SK	NT	Barančok Peter
E1.29 - [Festuca pallens] grassland	6240 - Sub-Pannonic steppic grasslands	CZ	VU	Lustyk Pavel
E1.2C - Pannonic loess steppic grassland	6250 - Pannonic loess steppic grasslands	SK	VU	Barančok Peter
E1.2F - Pannonic sand steppes	6260 - Pannonic sand steppes	SK	NT	Barančok Peter
E1.71 - [Nardus stricta] swards	6230 - Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	UA	LC	Voloshchuk Mykola

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
E1.71 - [Nardus stricta] swards - horské	6230 - Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	SK	NT	Barančok Peter
E1.71 - [Nardus stricta] swards - mokré	6230 - Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	SK	EN	Barančok Peter
E1.71 - [Nardus stricta] swards - vysokohorské	6230 - Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	SK	EN	Barančok Peter
E1.713 - Beskid [Calluna]-[Nardus] grassland	6230 - Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	PL	VU	Szewczyk Monika
E1.91 - Dwarf annual siliceous grassland	Unclassified	SK	NT	Barančok Peter
E1.92 - Perennial open siliceous grassland	Unclassified	CZ	NT	Lustyk Pavel
E2.1 - Permanent mesotrophic pastures and aftermath-grazed meadows	Unclassified	CZ	VU	Lustyk Pavel
E2.1 - Permanent mesotrophic pastures and aftermath-grazed meadows	Unclassified	SK	VU	Barančok Peter
E2.22 - Sub-Atlantic lowland hay meadows	6510 - Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	SK	NT	Barančok Peter
E2.22 - Sub-Atlantic lowland hay meadows	6510 - Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	CZ	VU	Lustyk Pavel
E2.233 - Carpathian submontane hay meadows	6510 - Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	PL	EN	Szewczyk Monika
E2.2333 - Eastern Carpathian yellow oatgrass meadows	6520 - Mountain hay meadows	UA	EN	Voloshchuk Mykola
E2.3 - Mountain hay meadows	6520 - Mountain hay meadows	UA	EN	Voloshchuk Mykola
E2.3 - Mountain hay meadows	6520 - Mountain hay meadows	SK	EN	Barančok Peter
E2.31 - Alpic mountain hay meadows	6520 - Mountain hay meadows	PL	EN	Szewczyk Monika
E3.4 - Moist or wet eutrophic and mesotrophic grassland	Unclassified	CZ	VU	Lustyk Pavel

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
E3.4 - Moist or wet eutrophic and mesotrophic grassland	Unclassified	SK	VU	Barančok Peter
E3.41 - Atlantic and sub-Atlantic humid meadows	Unclassified	CZ	VU	Lustyk Pavel
E3.41 - Atlantic and sub-Atlantic humid meadows	Unclassified	SK	VU	Barančok Peter
E3.43 - Subcontinental riverine meadows	6440 - Alluvial meadows of river valleys of the Cnidion dubii	SK	VU	Barančok Peter
E3.44 - Flood swards and related communities	Unclassified	CZ	LC	Lustyk Pavel
E3.44 - Flood swards and related communities	Unclassified	SK	NT	Barančok Peter
E3.46 - Continental humid meadows	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	VU	Barančok Peter
E3.47 - Northern boreal alluvial meadows	6450 - Northern boreal alluvial meadows	RO	NT	Barančok Peter
E3.51 - [Molinia caerulea] meadows and related communities	6410 - Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	UA	VU	Voloshchuk Mykola
E3.51 - [Molinia caerulea] meadows and related communities	6410 - Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	SK	VU	Barančok Peter
E3.51 - [Molinia caerulea] meadows and related communities	6410 - Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	RO	VU	Barančok Peter
E3.51 - [Molinia caerulea] meadows and related communities	6410 - Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	RO	VU	Barančok Peter
E3.51 - [Molinia caerulea] meadows and related communities	6410 - Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	CZ	VU	Lustyk Pavel
E4.11 - Boreo-alpine acidocline snow-patch grassland and herb habitats	6150 - Siliceous alpine and boreal grasslands	SK	VU	Barančok Peter
E4.11 - Boreo-alpine acidocline snow-patch grassland and herb habitats	6150 - Siliceous alpine and boreal grasslands	PL	VU	Szewczyk Monika
E4.113 - [Luzula spadicea] snow patch communities	6150 - Siliceous alpine and boreal grasslands	UA	VU	Voloshchuk Mykola

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
E4.12 - Boreo-alpine calcicline snow-patch grassland and herb habitats	6170 - Alpine and subalpine calcareous grasslands	RO	VU	Barančok Peter
E4.12 - Boreo-alpine calcicline snow-patch grassland and herb habitats	6170 - Alpine and subalpine calcareous grasslands	SK	CR	Barančok Peter
E4.121 - Alpic small herb calcicolous snow-patch communities	6170 - Alpine and subalpine calcareous grasslands	PL	CR	Szewczyk Monika
E4.2 - Moss and lichen dominated mountain summits, ridges and exposed slopes	6150 - Siliceous alpine and boreal grasslands	SK	NT	Barančok Peter
E4.3 - Acid alpine and subalpine grassland	6150 - Siliceous alpine and boreal grasslands	RO	VU	Barančok Peter
E4.31 - Alpic [Nardus stricta] swards and related communities	6150 - Siliceous alpine and boreal grasslands	UA	LC	Voloshchuk Mykola
E4.31 - Alpic [Nardus stricta] swards and related communities	6230 - Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	SK	EN	Barančok Peter
E4.317 - Carpathian mat-grass swards	6230 - Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	PL	CR	Szewczyk Monika
E4.3172 - Eastern Carpathian mat-grass swards	6230 - Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	UA	EN	Voloshchuk Mykola
E4.34 - Alpigenous acidophilous grassland	6150 - Siliceous alpine and boreal grasslands	PL	LC	Szewczyk Monika
E4.34 - Alpigenous acidophilous grassland	6150 - Siliceous alpine and boreal grasslands	SK	NT	Barančok Peter
E4.3413 - Carpathian [Carex curvula] grasslands	6170 - Alpine and subalpine calcareous grasslands	UA	VU	Voloshchuk Mykola
E4.3452 - Carpathian [Oreochloa disticha] grasslands	6170 - Alpine and subalpine calcareous grasslands	UA	NT	Voloshchuk Mykola
E4.34632 - Eastern Carpathian [Juncus trifidus] swards	6150 - Siliceous alpine and boreal grasslands	UA	VU	Voloshchuk Mykola
E4.4 - Calcareous alpine and subalpine grassland	6170 - Alpine and subalpine calcareous grasslands	RO	VU	Barančok Peter
E4.4 - Calcareous alpine and subalpine grassland	6170 - Alpine and subalpine calcareous grasslands	SK	EN	Barančok Peter

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
E4.41 - Closed calciphile alpine grassland	6170 - Alpine and subalpine calcareous grasslands	SK	VU	Barančok Peter
E4.42 - Wind edge [Kobresia myosuroides] swards	6170 - Alpine and subalpine calcareous grasslands	RO	VU	Barančok Peter
E4.43 - Calciphilous stepped and garland grassland	6170 - Alpine and subalpine calcareous grasslands	RO	VU	Barančok Peter
E4.43 - Calciphilous stepped and garland grassland	6170 - Alpine and subalpine calcareous grasslands	SK	VU	Barančok Peter
E4.439 - Carpathian calciphile stepped grasslands	6170 - Alpine and subalpine calcareous grasslands	PL	EN	Szewczyk Monika
E4.4392 - East Carpathian calciphile stepped grasslands	6170 - Alpine and subalpine calcareous grasslands	UA	VU	Voloshchuk Mykola
E4.43922 - East Carpathian [Festuca versicolor] grasslands	6170 - Alpine and subalpine calcareous grasslands	UA	VU	Voloshchuk Mykola
E4.43923 - East Carpathian [Festuca amethystina] grasslands	6170 - Alpine and subalpine calcareous grasslands	UA	VU	Voloshchuk Mykola
E5.21 - Xero-thermophile fringes	Unclassified	CZ	NT	Lustyk Pavel
E5.21 - Xero-thermophile fringes	Unclassified	SK	NT	Barančok Peter
E5.22 - Mesophile fringes	Unclassified	CZ	NT	Lustyk Pavel
E5.22 - Mesophile fringes	Unclassified	SK	NT	Barančok Peter
E5.4 - Moist or wet tall-herb and fern fringes and meadows	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	RO	NT	Barančok Peter
E5.4 - Moist or wet tall-herb and fern fringes and meadows	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	VU	Barančok Peter
E5.4 ?	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	CZ	LC	Lustyk Pavel
E5.4 ?	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	CZ	NT	Lustyk Pavel

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
E5.411 - Watercourse veils (other than of [Filipendula])	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	NT	Barančok Peter
E5.4111 - [Angelica archangelica] fluvial communities	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	UA	VU	Voloshchuk Mykola
E5.414 - Continental river bank tall-herb communities dominated by [Filipendula]	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	NT	Barančok Peter
E5.414 - Continental river bank tall-herb communities dominated by [Filipendula]	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	UA	ES	Voloshchuk Mykola
E5.423 - Continental tall-herb communities of humid meadows	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	VU	Barančok Peter
E5.5 - Subalpine moist or wet tall-herb and fern stands	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	VU	Barančok Peter
E5.514 - Carpathian tall herb communities	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	PL	LC	Szewczyk Monika
E5.5141 - Carpathian adenostyles communities	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	UA	VU	Voloshchuk Mykola
E5.5143 - Carpathian monkshood communities	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	UA	VU	Voloshchuk Mykola
E5.51441 - Carpathian white butterbur communities	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	UA	ES	Voloshchuk Mykola
E5.521 - Alpic tall-grass communities on siliceous substrates	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	UA	EN	Voloshchuk Mykola
E5.521 - Alpic tall-grass communities on siliceous substrates	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	LC	Barančok Peter
E5.521 - Alpic tall-grass communities on siliceous substrates	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	NT	Barančok Peter
E5.522 - Alpic tall-grass communities on carbonate substrates	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	NT	Barančok Peter
E5.523 - Alpic tall-grass communities on drier and warmer slopes	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	ES	Barančok Peter
E5.58 - Alpine [Rumex] communities	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	NT	Barančok Peter

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
E5.58 - Alpine [Rumex] communities	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	UA	LC	Voloshchuk Mykola
E5.5B - Alpine and subalpine fern stands	6430 - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	SK	EN	Barančok Peter
F2.1 - Subarctic and alpine dwarf willow scrub	6170 - Alpine and subalpine calcareous grasslands	SK	EN	Barančok Peter
F2.1 - Subarctic and alpine dwarf willow scrub	6170 - Alpine and subalpine calcareous grasslands	RO	EN	Barančok Peter
F2.111 - Alpic acid dwarf willow snow-patch communities	6150 - Siliceous alpine and boreal grasslands	PL	VU	Szewczyk Monika
F2.111 - Alpic acid dwarf willow snow-patch communities	6150 - Siliceous alpine and boreal grasslands	SK	EN	Barančok Peter
F2.12111 - Alpide [Salix retusa-reticulata] snowbed communities	4080 - Sub-Arctic Salix spp. scrub	UA	NT	Voloshchuk Mykola
F2.12111 - Alpide [Salix retusa-reticulata] snowbed communities	6170 - Alpine and subalpine calcareous grasslands	PL	VU	Szewczyk Monika
F2.12112 - Carpathian [Salix kitaibeliana] snowbed communities	4060 - Alpine and Boreal heaths	UA	NT	Voloshchuk Mykola
F2.2 - Evergreen alpine and subalpine heath and scrub	4060 - Alpine and Boreal heaths	RO	NT	Barančok Peter
F2.2 - Evergreen alpine and subalpine heath and scrub	4060 - Alpine and Boreal heaths	SK	NT	Barančok Peter
F2.21 - Alpide dwarf ericoid wind heaths	4060 - Alpine and Boreal heaths	RO	NT	Barančok Peter
F2.2122 - Carpathian dwarf [Vaccinium] wind heaths	4060 - Alpine and Boreal heaths	UA	VU	Voloshchuk Mykola
F2.22 - Alpide acidocline [Rhododendron] heaths	4060 - Alpine and Boreal heaths	RO	EN	Barančok Peter
F2.224 - Carpathian [Rhododendron kotschyi] heaths	4060 - Alpine and Boreal heaths	UA	VU	Voloshchuk Mykola
F2.23 - Southern Palaearctic mountain dwarf [Juniperus] scrub	4060 - Alpine and Boreal heaths	RO	VU	Barančok Peter

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
F2.231 - Mountain [Juniperus nana] scrub	4060 - Alpine and Boreal heaths	PL	LC	Szewczyk Monika
F2.24 - Alpigenic high mountain [Empetrum - Vaccinium] heaths	4060 - Alpine and Boreal heaths	PL	VU	Szewczyk Monika
F2.24 - Alpigenic high mountain [Empetrum - Vaccinium] heaths	4060 - Alpine and Boreal heaths	UA	VU	Voloshchuk Mykola
F2.24 - Alpigenic high mountain [Empetrum - Vaccinium] heaths	4060 - Alpine and Boreal heaths	RO	VU	Barančok Peter
F2.26 - [Bruckenthalia] heaths	4060 - Alpine and Boreal heaths	RO	EN	Barančok Peter
F2.27 - Alpide [Arctostaphylos uva-ursi] and [Arctostaphylos alpinus] heaths	4060 - Alpine and Boreal heaths	RO	CR	Barančok Peter
F2.29 - [Dryas octopetala] mats	4060 - Alpine and Boreal heaths	RO	EN	Barančok Peter
F2.29152 - Southeastern Carpathian [Dryas] mats	4060 - Alpine and Boreal heaths	UA	NT	Voloshchuk Mykola
F2.2A - Alpide high mountain dwarf [Vaccinium] heaths	4060 - Alpine and Boreal heaths	UA	EN	Voloshchuk Mykola
F2.2B - Alpide high mountain [Genista] and [Chamaecytisus] heaths	4060 - Alpine and Boreal heaths	RO	VU	Barančok Peter
F2.31 - Mountain [Alnus] brush	4060 - Alpine and Boreal heaths	UA	EN	Voloshchuk Mykola
F2.3112 - Carpathian green alder scrub	4060 - Alpine and Boreal heaths	UA	ES	Voloshchuk Mykola
F2.32 (Subalpine and oroboreal [Salix] brush)	4080 - Sub-Arctic Salix spp. scrub	SK	NT	Barančok Peter
F2.322 - Oroboreal [Salix] scrub	4080 - Sub-Arctic Salix spp. scrub	RO	NT	Barančok Peter
F2.33 - Subalpine tall herb mixed brushes	4080 - Sub-Arctic Salix spp. scrub	SK	LC	Barančok Peter
F2.4 - Conifer scrub close to the tree limit	4070 - Bushes with Pinus mugo and Rhododendron hirsutum (Mugo-Rhododendretum hirsuti)	RO	ES	Barančok Peter

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
F2.46 - Carpathian [Pinus mugo] scrub	4070 - Bushes with Pinus mugo and Rhododendron hirsutum (Mugo-Rhododendretum hirsuti)	UA	ES	Voloshchuk Mykola
F2.46 - Carpathian [Pinus mugo] scrub	4070 - Bushes with Pinus mugo and Rhododendron hirsutum (Mugo-Rhododendretum hirsuti)	SK	ES	Barančok Peter
F2.461 - Carpathian subalpine mountain pine scrub	4070 - Bushes with Pinus mugo and Rhododendron hirsutum (Mugo-Rhododendretum hirsuti)	UA	ES	Voloshchuk Mykola
F2.462 - Carpathian alpenrose mountain pine scrub	4070 - Bushes with Pinus mugo and Rhododendron hirsutum (Mugo-Rhododendretum hirsuti)	UA	VU	Voloshchuk Mykola
F3.1 - Temperate thickets and scrub	Unclassified	SK	ES	Barančok Peter
F3.1 - Temperate thickets and scrub	Unclassified	CZ	NT	Lustyk Pavel
F3.11 - Medio-European rich-soil thickets	Unclassified	CZ	LC	Lustyk Pavel
F3.16 - Juniperus communis scrub	5130 - Juniperus communis formations on heaths or calcareous grasslands	CZ	VU	Lustyk Pavel
F3.24 - Subcontinental and continental deciduos thickets	40A0 - Continental deciduous thickets	SK	NT	Barančok Peter
F3.24 - Subcontinental and continental deciduos thickets	40A0 - Subcontinental peri-Pannonic scrub	CZ	VU	Lustyk Pavel
F4.21 - Submontane [Vaccinium] - [Calluna] heaths	4030 - European dry heaths	RO	VU	Barančok Peter
F4.21 - Submontane [Vaccinium] - [Calluna] heaths	4030 - European dry heaths	SK	VU	Barančok Peter
F4.21 - Submontane [Vaccinium] - [Calluna] heaths	4030 - European dry heaths	CZ	LC	Lustyk Pavel
F4.22 - Sub-Atlantic [Calluna] - [Genista] heaths	4030 - European dry heaths	SK	VU	Barančok Peter
F9.1 - Riverine scrub	3230 - Alpine rivers and their ligneous vegetation with Myricaria germanica	RO	EN	Barančok Peter
F9.1 - Riverine scrub	3240 - Alpine rivers and their ligneous vegetation with Salix elaeagnos	RO	VU	Barančok Peter

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
F9.1 - Riverine scrub	Unclassified	SK	NT	Barančok Peter
F9.11 - Orogenous riverine brush	3240 - Alpine rivers and their ligneous vegetation with Salix elaeagnos	SK	VU	Barančok Peter
F9.11 - Orogenous riverine brush	3240 - Alpine rivers and their ligneous vegetation with Salix elaeagnos	CZ	VU	Lustyk Pavel
F9.13 - Montane river gravel low brush	3230 - Alpine rivers and their ligneous vegetation with Myricaria germanica	SK	CR	Barančok Peter
F9.13 - Montane river gravel low brush	3230 - Alpine rivers and their ligneous vegetation with Myricaria germanica	CZ	CR	Lustyk Pavel
F9.2 - [Salix] carr and fen scrub	Unclassified	UA	ES	Voloshchuk Mykola
F9.2 - [Salix] carr and fen scrub	Unclassified	SK	NT	Barančok Peter
F9.21 - Grey willow carrs	Unclassified	CZ	LC	Lustyk Pavel
H1 - Terrestrial underground caves, cave systems, passages and waterbodies	8310 - Caves not open to the public	SK	LC	Barančok Peter
H1 - Terrestrial underground caves, cave systems, passages and waterbodies	8310 - Caves not open to the public	CZ	LC	Lustyk Pavel
H2.31 - Alpine siliceous screes	8110 - Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	SK	VU	Barančok Peter
H2.32 - Medio-European upland siliceous screes	8150 - Medio-European upland siliceous screes	SK	VU	Barančok Peter
H2.32 - Medio-European upland siliceous screes	8150 - Medio-European upland siliceous screes	SK	NT	Barančok Peter
H2.44 - Carpathian calcareous screes	6170 - Alpine and subalpine calcareous grasslands	UA	NT	Voloshchuk Mykola
H2.44 - Carpathian calcareous screes	8120 - Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	SK	VU	Barančok Peter
H2.441 - West Carpathian calcareous screes	8120 - Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	SK	EN	Barančok Peter

EUNIS Habitat	NATURA2000 Habitat	Coun-try	Red List Status - category	Author
H2.442 - East Carpathian calcareous screes	6170 - Alpine and subalpine calcareous grasslands	UA	NT	Voloshchuk Mykola
H2.5 - Acid siliceous screes of warm exposures	8150 - Medio-European upland siliceous screes	SK	VU	Barančok Peter
H2.6 - Calcareous and ultra-basic screes of warm exposures	8160 - Medio-European calcareous scree of hill and montane levels	SK	VU	Barančok Peter
H2.6 - Calcareous and ultra-basic screes of warm exposures	8160 - Medio-European calcareous scree of hill and montane levels	SK	NT	Barančok Peter
H2.6 - Calcareous and ultra-basic screes of warm exposures	8160 - Medio-European calcareous scree of hill and montane levels	CZ	NT	Lustyk Pavel
H2.6 - Calcareous and ultra-basic screes of warm exposures	8160 - Medio-European calcareous scree of hill and montane levels	RO	NT	Barančok Peter
H2.61 - Peri-Alpine thermophilous screes	8160 - Medio-European calcareous scree of hill and montane levels	SK	VU	Barančok Peter
H3.11 - Middle European montane siliceous cliffs	8220 - Siliceous rocky slopes with chasmophytic vegetation	SK	NT	Barančok Peter
H3.11 - Middle European montane siliceous cliffs	8220 - Siliceous rocky slopes with chasmophytic vegetation	CZ	LC	Lustyk Pavel
H3.11 - Middle European montane siliceous cliffs	8220 - Siliceous rocky slopes with chasmophytic vegetation	RO	NT	Barančok Peter
H3.114 - Carpathian montane siliceous cliffs	8220 - Siliceous rocky slopes with chasmophytic vegetation	SK	NT	Barančok Peter
H3.25 - Alpine and sub-mediterranean chasmophyte communities	8210 - Calcareous rocky slopes with chasmophytic vegetation	SK	VU	Barančok Peter
H3.4 - Wet inland cliffs	8210 - Calcareous rocky slopes with chasmophytic vegetation	SK	NT	Barančok Peter
H3.4 - Wet inland cliffs	8210 - Calcareous rocky slopes with chasmophytic vegetation	CZ	NT	Lustyk Pavel
H3.6 - Weathered rock and outcrop habitats	8230 - Siliceous rock with pioneer vegetation of the Sedo-Scleranthion or of the Sedo albi-Veronicion dillenii	SK	NT	Barančok Peter

Table 4 Overview of habitats in the Carpathian region – synthesis

EUNIS Habitat	Country	Red List Status - category
C1.1 - Permanent oligotrophic lakes, ponds and pools	SK	CR
C1.14 - Charophyte submerged carpets in oligotrophic waterbodies	SK, CZ	VU
C1.2 - Permanent mesotrophic lakes, ponds and pools	SK	EN
C1.32 - Free-floating vegetation of eutrophic waterbodies	SK	NT
C1.33 - Rooted submerged vegetation of eutrophic waterbodies	SK, CZ	VU
C1.34 - Rooted floating vegetation of eutrophic waterbodies	SK	EN
C1.341 - Shallow-water floating communities	CZ	VU
C1.4 - Permanent dystrophic lakes, ponds and pools	PL, RO	CR
C1.45 - Peatmoss and [Utricularia] communities of dystrophic waterbodies	SK	CR
C2.11 - Soft water springs	SK, CZ, UA	NT
C2.121 - Petrifying springs with tufa or travertine formations	SK, CZ, PL, RO	CR (EN)
C2.2 - Permanent non-tidal, fast, turbulent watercourses	SK	NT
C2.3 - Permanent non-tidal, smooth-flowing watercourses	SK, CZ	VU
C2.6 - Films of water flowing over rocky watercourse margins; C2.6 - Beds of rivers and streems; C2.7 - Riverine islets	SK, UA	VU
C3.1 - Species-rich helophyte beds	SK, CZ	LC
C3.2 - Water-fringing reedbeds and tall helophytes other than canes	SK, CZ	NT
C3.231 - [Typha latifolia] beds	UA	EN
C3.24 - Medium-tall non-graminoid waterside communities	CZ	VU
C3.26 - [Phalaris arundinacea] beds	SK, CZ	NT
C3.29 - Water-fringing large sedge communities	UA	VU
C3.4 - Species-poor beds of low-growing water-fringing or amphibious vegetation	SK	NT
C3.41 - Euro-Siberian perennial amphibious communities	SK, CZ	VU (NT)
C3.51 - Euro-Siberian dwarf annual amphibious swards	SK	VU
C3.53 - Euro-Siberian annual river mud communities	SK, CZ	VU (NT)
C3.55 - Sparsely vegetated river gravel banks	SK, CZ	NT (EN)
C3.551 - Boreo-alpine stream gravel habitats	RO	NT
C3.552 - Montane river gravel habitats	RO	NT
D1.11 - Active, relatively undamaged raised bogs	SK, PL, RO, UA	EN (CR)
D1.111 - Raised bog hummocks, ridges and lawns	SK	CR
D1.11111 - [Sphagnum magellanicum] hummocks	UA	VU
D1.11112 - [Sphagnum fuscum] hummocks	UA	VU

EUNIS Habitat	Country	Red List Status - category
D1.11126 - [Eriophorum-Sphagnum fuscum] lawns	UA	VU
D1.1112A - [Eriophorum-Sphagnum magellanicum] lawns	UA	VU
D1.11133 - Crowberry shrub hummocks	UA	VU
D1.11134 - [Vaccinium] shrub hummocks	UA	EN
D1.112 - Raised bog hollows (schlenken)	SK	CR
D1.12 - Damaged, inactive bogs	SK, PL	VU
D1.121 - Damaged, inactive bogs, dominated by dense [Molinia]	RO	VU
D1.123 - Ditched raised bogs	SK	EN
D2.3 - Transition mires and quaking bogs	SK, CZ, PL, RO	EN (VU)
D2.33 - [Carex rostrata] quaking mires	UA	VU
D2.3C - [Eriophorum vaginatum] quaking bogs	UA	VU
D2.3H - Wet, open, acid peat and sand, with [Rhynchospora alba] and [Drosera]	UA	VU
D4.1 - Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	SK, CZ, RO	EN (VU)
D4.134 - Carpathian Davall sedge fens	PL	VU
D4.1C - [Carex rostrata] alkaline fens	UA	VU
D4.1N16 - Carpathian oriental leopardsbane communities	UA	VU
D4.2 - Basic mountain flushes and streamsides, with a rich arctic-montane flora	RO	VU
D5.21 - Beds of large [Carex] spp.	SK, UA	VU
D5.24 - Fen [Cladium mariscus] beds	SK, RO	CR (EN)
D6.11 - Interior European [Puccinellia distans] meadows	SK	EN
D6.14 - Swards of Carpathian travertine concretions	SK	CR
E1.11 - Euro-Siberian rock debris swards	SK, CZ	NT
E1.12 - Euro-Siberian pioneer calcareous sand swards	SK	EN
E1.22 - Arid subcontinental steppic grassland ([Festucion valesiacae])	SK, CZ	VU
E1.23 - Meso-xerophile subcontinental meadow-steppes ([Cirsio-Brachypodion])	SK	NT
E1.28 - Central European calcaro-siliceous grassland	SK	NT
E1.29 - [Festuca pallens] grassland	SK, CZ	NT (VU)
E1.2C - Pannonic loess steppic grassland	SK	VU
E1.2F - Pannonic sand steppes	SK	NT
E1.71 - [Nardus stricta] swards - horské	SK, UA	NT
E1.71 - [Nardus stricta] swards - mokré	SK	EN
E1.71 - [Nardus stricta] swards - vysokohorské	SK	EN

EUNIS Habitat	Country	Red List Status - category
E1.713 - Beskid [Calluna]-[Nardus] grassland	PL	VU
E1.91 - Dwarf annual siliceous grassland	SK	NT
E1.92 - Perennial open siliceous grassland	CZ	NT
E2.1 - Permanent mesotrophic pastures and aftermath-grazed meadows	SK, CZ	VU
E2.22 - Sub-Atlantic lowland hay meadows	SK, CZ	NT (VU)
E2.233 - Carpathian submontane hay meadows	PL	EN
E2.2333 - Eastern Carpathian yellow oatgrass meadows	UA	EN
E2.3 - Mountain hay meadows	SK, UA	EN
E2.31 - Alpic mountain hay meadows	PL	EN
E3.4 - Moist or wet eutrophic and mesotrophic grassland	SK, CZ	VU
E3.41 - Atlantic and sub-Atlantic humid meadows	SK, CZ	VU
E3.43 - Subcontinental riverine meadows	SK	VU
E3.44 - Flood swards and related communities	SK, CZ	NT
E3.46 - Continental humid meadows	SK	VU
E3.47 - Northern boreal alluvial meadows	RO	NT
E3.51 - [Molinia caerulea] meadows and related communities	SK, CZ, RO, UA	VU
E4.11 - Boreo-alpine acidocline snow-patch grassland and herb habitats	SK, PL	VU
E4.113 - [Luzula spadicea] snow patch communities	UA	VU
E4.12 - Boreo-alpine calcicline snow-patch grassland and herb habitats	SK, RO	CR (EN)
E4.121 - Alpic small herb calcicolous snow-patch communities	PL	CR
E4.2 - Moss and lichen dominated mountain summits, ridges and exposed slopes	SK	NT
E4.3 - Acid alpine and subalpine grassland	RO	VU
E4.31 - Alpic [Nardus stricta] swards and related communities	SK, UA	NT (EN)
E4.317 - Carpathian mat-grass swards	PL	CR
E4.3172 - Eastern Carpathian mat-grass swards	UA	EN
E4.34 - Alpigenous acidophilous grassland	SK, PL	NT
E4.3413 - Carpathian [Carex curvula] grasslands	UA	VU
E4.3452 - Carpathian [Oreochloa disticha] grasslands	UA	NT
E4.34632 - Eastern Carpathian [Juncus trifidus] swards	UA	VU
E4.4 - Calcareous alpine and subalpine grassland	SK, RO	VU (EN)
E4.41 - Closed calciphile alpine grassland	SK	VU
E4.42 - Wind edge [Kobresia myosuroides] swards	RO	VU

EUNIS Habitat	Country	Red List Status - category
E4.43 - Calciphilous stepped and garland grassland	SK, RO	VU
E4.439 - Carpathian calciphile stepped grasslands	PL	EN
E4.4392 - East Carpathian calciphile stepped grasslands	UA	VU
E4.43922 - East Carpathian [Festuca versicolor] grasslands	UA	VU
E4.43923 - East Carpathian [Festuca amethystina] grasslands	UA	VU
E5.21 - Xero-thermophile fringes	SK, CZ	NT
E5.22 - Mesophile fringes	SK, CZ	NT
E5.4 - Moist or wet tall-herb and fern fringes and meadows	SK, CZ, RO	VU (NT)
E5.411 - Watercourse veils (other than of [Filipendula])	SK	NT
E5.4111 - [Angelica archangelica] fluvial communities	UA	VU
E5.414 - Continental river bank tall-herb communities dominated by [Filipendula]	SK, UA	NT (LC)
E5.423 - Continental tall-herb communities of humid meadows	SK	VU
E5.5 - Subalpine moist or wet tall-herb and fern stands	SK	VU
E5.514 - Carpathian tall herb communities	PL	LC
E5.5141 - Carpathian adenostyles communities	UA	VU
E5.5143 - Carpathian monkshood communities	UA	VU
E5.51441 - Carpathian white butterbur communities	UA	ES
E5.521 - Alpic tall-grass communities on siliceous substrates	UA	EN
E5.521 - Alpic tall-grass communities on siliceous substrates	SK	NT
E5.522 - Alpic tall-grass communities on carbonate substrates	SK	NT
E5.523 - Alpic tall-grass communities on drier and warmer slopes	SK	ES
E5.58 - Alpine [Rumex] communities	SK, UA	NT
E5.5B - Alpine and subalpine fern stands	SK	EN
F2.1 - Subarctic and alpine dwarf willow scrub	SK, RO	EN
F2.111 - Alpic acid dwarf willow snow-patch communities	SK, PL	VU (EN)
F2.12111 - Alpide [Salix retusa-reticulata] snowbed communities	PL, UA	NT (VU)
F2.12112 - Carpathian [Salix kitaibeliana] snowbed communities	UA	NT
F2.2 - Evergreen alpine and subalpine heath and scrub	SK, RO	NT
F2.21 - Alpide dwarf ericoid wind heaths	RO	NT
F2.2122 - Carpathian dwarf [Vaccinium] wind heaths	UA	VU
F2.22 - Alpide acidocline [Rhododendron] heaths	RO	EN
F2.224 - Carpathian [Rhododendron kotschyi] heaths	UA	VU

EUNIS Habitat	Country	Red List Status - category
F2.23 - Southern Palaearctic mountain dwarf [Juniperus] scrub	RO	VU
F2.231 - Mountain [Juniperus nana] scrub	PL	LC
F2.24 - Alpigenic high mountain [Empetrum - Vaccinium] heaths	PL, RO, UA	VU
F2.26 - [Bruckenthalia] heaths	RO	EN
F2.27 - Alpide [Arctostaphylos uva-ursi] and [Arctostaphylos alpinus] heaths	RO	CR
F2.29 - [Dryas octopetala] mats	RO	EN
F2.29152 - Southeastern Carpathian [Dryas] mats	UA	NT
F2.2A - Alpide high mountain dwarf [Vaccinium] heaths	UA	EN
F2.2B - Alpide high mountain [Genista] and [Chamaecytisus] heaths	RO	VU
F2.31 - Mountain [Alnus] brush	UA	EN
F2.3112 - Carpathian green alder scrub	UA	ES
F2.32 (Subalpine and oroboreal [Salix] brush)	SK	NT
F2.322 - Oroboreal [Salix] scrub	RO	NT
F2.33 - Subalpine tall herb mixed brushes	SK	LC
F2.4 - Conifer scrub close to the tree limit	RO	ES
F2.46 - Carpathian [Pinus mugo] scrub	SK, UA	ES
F2.461 - Carpathian subalpine mountain pine scrub	UA	ES
F2.462 - Carpathian alpenrose mountain pine scrub	UA	VU
F3.1 - Temperate thickets and scrub	SK, CZ	LC (NT)
F3.11 - Medio-European rich-soil thickets	CZ	LC
F3.16 - Juniperus communis scrub	CZ	VU
F3.24 - Subcontinental and continental deciduos thickets	SK, CZ	NT (VU)
F4.21 - Submontane [Vaccinium] - [Calluna] heaths	SK, CZ, RO	VU (NT)
F4.22 - Sub-Atlantic [Calluna] - [Genista] heaths	SK	VU
F9.1 - Riverine scrub	RO	EN
F9.1 - Riverine scrub	SK, RO	VU
F9.11 - Orogenous riverine brush	SK, CZ	VU
F9.13 - Montane river gravel low brush	SK. CZ	CR
F9.2 - [Salix] carr and fen scrub	SK, UA	NT (ES)
F9.21 - Grey willow carrs	CZ	LC
H1 - Terrestrial underground caves, cave systems, passages and waterbodies	SK, CZ	LC
H2.31 - Alpine siliceous screes	SK	VU

EUNIS Habitat	Country	Red List Status - category
H2.32 - Medio-European upland siliceous screes	SK	VU
H2.44 - Carpathian calcareous screes	SK, UA	VU (NT)
H2.441 - West Carpathian calcareous screes	SK	EN
H2.442 - East Carpathian calcareous screes	UA	NT
H2.5 - Acid siliceous screes of warm exposures	SK	VU
H2.6 - Calcareous and ultra-basic screes of warm exposures	SK, CZ, RO	NT (VU)
H2.61 - Peri-Alpine thermophilous screes	SK	VU
H3.11 - Middle European montane siliceous cliffs	SK, CZ, RO	NT
H3.114 - Carpathian montane siliceous cliffs	SK	NT
H3.25 - Alpine and sub-mediterranean chasmophyte communities	SK	VU
H3.4 - Wet inland cliffs	SK, CZ	NT
H3.6 - Weathered rock and outcrop habitats	SK	NT

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