CARPATHIAN RED LIST OF FOREST HABITATS AND SPECIES
CARPATHIAN LIST OF INVASIVE ALIEN SPECIES
(DRAFT)

THE STATE NATURE CONSERVANCY
OF THE SLOVAK REPUBLIC

2014

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(DRAFT)

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DRAFT RED LISTS OF THREATENED CARPATHIAN HABITATS AND SPECIES AND CARPATHIAN LIST OF INVASIVE ALIEN SPECIES

Ján Kadlečík (editor)

1. Introduction

The Carpathian Mountains, ranging across seven countries from the Czech Republic, Poland, Slovakia, Ukraine, Hungary, Romania and the small part of Serbia, are Europe's last great natural area with rich biodiversity and diversified landscapes[1]. They host a unique natural and cultural diversity, exceptional at the European scale and are recognized as one of the biodiversity hotspots. Ongoing socioeconomic changes and environmental impacts influence this sensitive ecological system in the region and call for further joint action[2].

This publication is result of the activities of the Work Package 3 of the project *Integrated management of biological and landscape diversity for sustainable regional development and ecological connectivity in the Carpathians*[3] ("BioREGIO Carpathians") funded from the South East Europe Transnational Cooperation Programme. The activitity was lead during 2011 – 2014 by the State Nature Conservancy of the Slovak Republic as a partner of the project. The publication was prepared in cooperation with the other project *Development of nature conservation and protected areas in Slovak Carpathians* funded from the Swiss-Slovak Cooperation Programe[4] and provides first draft lists of threatened habitats and species native to the Carpathians and the list of invasive alien species in the Carpathian region as a basis for further consultation and finalization for final approval by the Carpathian Convention bodies and following activities.

Assessment was made for selected taxonomic groups for which we expected to have sufficient data to synthesise and communicate on the conservation status (mammals, birds, reptiles, amphibians, fishes, butterflies, orthopterans, dragonflies, spiders, molluscs and vascular plants), using IUCN Red List categories and criteria (version 3.1) (IUCN 2012a). The innovative approach was used when developing the Red List for habitats for which there are still only draft guidelines prepared by IUCN. Because of delays in contracting the specialists for the Red List of non-forest habitats, in this publication only Red List of forest habitats is included. The Red List of non-forest habitats will be available on the relevant web sites of the projects.

Red Lists are lists of animal and plant species, plant communities, habitats and habitat complexes that are either collapsed, extinct, have disappeared or are endangered. The Red List is a tool to inform and catalyse action for biodiversity conservation and policy change, critical to protecting the natural resources. It provides information on population size and trends, geographic range and habitat needs of species[5].

For the purposes of regional conservation assessments there are important reasons to assess species' extinction risk and publish Red Lists within specific geographically defined areas and special guidelines were produced by IUCN to assist in the application of the IUCN Red List Categories and Criteria at regional levels (IUCN 2012b).

The Red Lists have many uses in conservation including:

- Conservation planning – informing species-based conservation actions and identifying important sites for conservation.
- Decision-making – influencing conservation decisions at multiple scales, from environmental impact assessments to international multilateral environmental

[1] *http://wwf.panda.org/what_we_do/where_we_work/black_sea_basin/danube_carpathian/blue_river_green_mtn/*
[2] *http://www.bioregio-carpathians.eu/*
[3] *http://www.bioregio-carpathians.eu/*
[4] *http://www.sopsr.sk/web/?cl=10705*
[5] *http://www.iucn.org/about/work/programmes/species/our_work/the_iucn_red_list/*

agreements.
- Monitoring – indicating the current status of species and revealing trends in their extinction risk over time, to track progress towards biodiversity targets[6].

To assess current and potential future threats to the biological diversity, ecosystems, habitats or species of the Carpathians caused by introduction or release of invasive alien species (IAS) within the national territory of each Party and to prevent introduction or realease of IAS or to harmonize and coordinate measures and common actions it is necessary first to identify such species which are likely to have adverse environmental impacts that could affect the biological diversity, ecosystems, habitats or species of the Carpathians. Therefore the first List of Invasive Alien Species was elaborated for further consultation and development.

This initiative:
- makes a contribution to the implementation of provisions of the Carpathian Convention;
- makes a contribution to the Global and European Red Lists by adding Carpathian species and habitats, and to the European Lists of Invasive Alien Species;
- provides the basis for a consolidated Carpathian lists as a baseline for monitoring the success of future conservation action;
- is a mechanism for species conservation and management of invasive species in the region; and
- communicates the best possible consensus information on habitats and species status to Conventions and governments to promote conservation action on the ground.

The initiative tried to mobilize existing knowledge on species status which is sometimes dispersed or unpublished, and to make it available for conservation purposes. Unfortunately from different reasons we could not ensure full participation of all appropriate experts and scientists, but with support from about 100 specialists from all Carpathian countries we received the good basis for further development of lists of threaned habitats, threatened species and of invasive alien species in the Carpathian Mountains.

2. Assessments

2.1 Objectives of the assessment

The objectives of regional assessments can be defined e.g. according to Freyhof & Brooks (2011):
- To contribute to regional conservation planning through the provision of a baseline dataset describing the conservation status of the regions species.
- To identify those geographic areas and habitats that need conservation measures to prevent extinctions and ensure that species reach and maintain a favourable conservation status.
- To identify the major threats and propose mitigating measures and conservation actions to address them.
- To strengthen the network of experts focused on conservation of species in the region, so that the assessments can be kept up-to-date, and expertise be targeted to address the highest conservation priorities.

To work on hamononized policies and measures aiming at the prevention of introduction of invasive alien species (IAS) which are likely to have adverse environmental impacts and to take measures for their controla or eradication at regional level, it is crucial to identify those species and assess their potential to affect biological diversity in the region.

2.2 Background

The Parties to the Framework Convention on the Protection and Sustainable Development of the Carpathians (Kyiv, Ukraine; 2003 – the "Carpathian Convention") according to its Article 4 on *Conservation and sustainable use of biological and landscape diversity* agreed to pursue policies aiming at conservation, sustainable use and restoration of biological and landscape diversity throughout the Carpathians. They commited themselves to take appropriate measures to ensure a high level of protection and sustainable use of natural and semi-natural habitats, their continuity and connectivity, and species of flora and fauna being characteristic to the Carpathians, in particular the protection of endangered species, endemic species and large carnivores. The Parties shall pursue policies aiming at the prevention of introduction of alien invasive species, their control or eradication. Another obligation is to develop and/or promote compatible monitoring systems, coordinated regional inventories of species and habitats, coordinated scientific research, and their networking.
These provisions are further elaborated in obligatory articles of the Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity to the Carpathian Convention (Bucharest, 2008; the "Protocol") with objective to enhance the conservation, restoration and sustainable use of biological and landscape diversity of the Carpathians, bringing benefits to present and future generations. To achieve these objectives, the Parties shall harmonise and coordinate their efforts and cooperate on conservation, maintenance and sustainable use of natural and semi-natural habitats and conservation and sustainable use of species of flora and fauna, they should cooperate especially on the development, harmonization and implementation of relevant management plans aimed at achieving common standards for protection and sustainable use of habitats and species, prevention of introduction of invasive alien species which might threaten ecosystems, habitats or species native to the Carpathians, their control or eradication. Another field is development and/or promotion of compatible biodiversity indicators and monitoring systems, of coordinated regional inventories of species and habitats, development and/or promotion of coordinated scientific research programs and projects, etc.
According to the Article 8 of the Protocol (*Conservation, maintenance, restoration and sustainable use of natural and semi-natural habitats*) and the Article 12 (*Conservation of endangered species including endemic species, and large carnivores of the Carpathians*) the Conference of the Parties shall adopt a list of endangered natural and semi-natural habitat types native to the Carpathians (Carpathian Red List of Habitats) and a list of endangered flora and fauna species native to the Carpathians (Carpathian Red List of Species) based on internationally recognized principles and criteria.
According to the Article 13 (*Prevention of the introduction of invasive alien species and/or genetically modified organisms threatening ecosystems, habitats or species, their control or eradication*) each Party shall pursue policies aiming at the prevention of introduction or release of invasive alien species (IAS) which are likely to have adverse environmental impacts that could affect the biological diversity, ecosystems, habitats or species of the Carpathians, including early warning on occurrence of new invasive alien species on its territory. The Parties shall take measures to prevent introduction or release of IAS and, if need be, control or eradication of such species.
In the Article 18 (*Compatible monitoring and information systems*) the Parties agreed to cooperate to develop a joint information system on biological and landscape diversity in the Carpathians and to support coordinated regional inventories of species and habitats of the Carpathians.
The implementation document for the above mentioned obligations of the Contracting Parties to the Carpathian Convention is the Strategic Action Plan adopted in 2011[8].

Action 2.1. (*The elaboration of the Carpathian Red List of Habitats*) and Action 3.1. (*Carpathian Red List of Species elaboration*) of the Strategic Action Plan require
- Compile and analyse scientific data, national inventories and maps of natural and semi-natural habitats and concerning flora and fauna species native to the Carpathians, in particular endangered species including endemic species and large carnivores, within the national territory of each Party;
- Elaborate the proposal of the Carpathian Red List of Habitats, including endangered natural and semi-natural habitat types native to the Carpathians, which either are in danger of disappearance in their natural range, or have a small natural range following their regression or by reason of their intrinsically restricted area, or present outstanding examples of typical characteristics of the Carpathian region - to be adopted by the Conference of the Parties, and revised every twelve years.
- Prepare the proposal of the Carpathian Red List of Species based on compilation and analysis of scientific data and national inventories concerning endangered species, including endemic flora and fauna species native to the Carpathians, and large carnivores and following internationally recognized principles and criteria (e.g. IUCN Red List Criteria) to be adopted by the Conference of the Parties, and revised every twelve years.

Action 5.1. asks to develop national policies and/or strategies targeted at the prevention of introduction or release of invasive alien species which are likely to have adverse environmental impacts that could affect the biological diversity, ecosystems, habitats or species of the Carpathians in the national territory; or, if such policies and/or strategies are already in place - evaluate their effectiveness and implementation up to date.
Action 9.1. requires to cooperate with scientific and other relevant institutions on:
a) Elaboration of guidelines on harmonisation of environmental monitoring programmes of the Parties in the Carpathians, in particular those concerning habitats and species native to the Carpathians, with the objective to ensure data comparability;
b) Preparation of the proposals for common monitoring programs to be jointly undertaken in the Carpathians by the Parties, in particular those concerning endangered natural and semi-natural habitat types listed in the Carpathian Red List of Habitats and listed in the Carpathian Red List of Species.

Finally Action 9.2. assesses duties to cooperate to develop a joint information system on the state of biological and landscape diversity in the Carpathians, based on the relevant existing Clearing House Mechanisms, including national results of the public research provided by the Parties and results of the common scientific programs and projects jointly undertaken in the Carpathians by the Parties, a joint biodiversity information system should be established.

These were the reasons why the development of the Carpathian Red List of threatened habitats and species and the List of Invasive Alien Species of the Carpathians were included as important activity to the project "Integrated management of biological and landscape diversity for sustainable regional development and ecological connectivity in the Carpathians" (BioREGIO Carpathians).

[6] *http://www.iucn.org/about/work/programmes/species/our_work/the_iucn_red_list/*
[7] *http://www.carpathianconvention.org/documents-carpathian-convention.html*
[8] *http://www.carpathianconvention.org/documents-thematic-areas.html*

The activity was coordinated by the Project Partner 9 – the State Nature Conservancy of the Slovak Republic in Banská Bystrica and other relevant project partners were involved (Nature Conservation Agency of the Czech Republic, Szent István University – Hungary, Environmental Information Centre UNEP/GRID Warszaw – Poland, Regional Environmental Protection Agency Sibiu and Iron Gates Natural Park Administration – Romania, National Forest Centre – Slovakia, Public Enterprise Djerdap National Park – Serbia and Carpathian Biosphere Reserve – Ukraine) which engaged about 100 experts working on threatened habitats, species and invasive alien species of plants and animals.

There are not many comprehensive regional Red Lists developed in Europe so far.
IUCN and the European Commission have been working together on an initiative to assess around 6,000 European species according to IUCN regional Red Listing Guidelines. To date, European regional assessments have been completed for mammals, reptiles, amphibians, butterflies, dragonflies, freshwater fishes, freshwater and terrestrial molluscs as well as for selected saproxylic beetles, and vascular plant species. Currently there are assessing also pollinators (bees and bumblebees), priority medicinal plants and marine fishes and reassessing all birds[9].
The Mediterranean Red List is an on-going process that aims at assessing the conservation status of the fauna and flora of the Mediterranean region considered also as a biodiversity hotspot. This initiative highlights the species that are threatened with extinction at the Mediterranean level (e.g. mammals, reptiles, amphibians, freshwater and marine fishes, freshwater molluscs, dragonflies, and selected groups of vascular plants) – so that appropriate regional and local conservation action can be taken to improve their status[10].
Another regional Red Lists exist for sea basins - Black Sea Red Data Book[11] and Baltic Sea Red Lists of biotopes[12] and species[13] (HELCOM 2013a, b).
All these initiatives have been implemented in specific long-term projects with involvement of a number of specialists and funding from different sources.

The first Carpathian List of Endangered Species was compiled by Z. J. Witkowski, W. Król and W. Solarz (Witkowski et al. eds 2003) and published more than 10 years ago by the Carpathian Ecoregion Initiative, WWF and Institute of Nature Conservation, Polish Academy of Sciences. This Red List also covered only part of the Carpathians' taxonomic groups and compiled information on red listed taxa and valuable plant alliances in particular Carpathian countries without assessment expressed clearly in used criteria on regional level.
Ivan Vološčuk (Vološčuk ed. 1996) compiled lists of threatened plants and vertebrates of 17 Carpathian national parks.
Within limited time, funding, expertise and data available in the BioREGIO project our ambition was to prepare at least first drafts of the Red List of forest habitats and non-forest habitats, Red List of vascular plants, of Vertebrates and selected groups of Invertebrates, and the List of Invasive Alien Species for further improvements and approval by the Carpathian Convention Contracting Parties.
We understand that there is much to be done and to increase the number of species assessed, improving the taxonomic coverage and thus providing a stronger base to enable better conservation and policy decisions in the Carpathian region. Additional projects for further harmonization of data sets and compiling of lists of threatened taxa in the Carpathians are necessary.
The collected data will be integrated in the Carpathian Joint Biodiversity Information System (CJBIS).

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

[9] *http://www.iucnredlist.org/initiatives/europe*
[10] *http://www.iucnredlist.org/initiatives/mediterranean*
[11] *http://www.grid.unep.ch/bsein/redbook/index.htm*
[12] *http://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-biotopes-habitats-and-biotope-complexes/*
[13] *http://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-species*
[14] *www.carpates.org/cbis/orogs.html*

2.3 Assessment Methodology

2.3.1 Geographic scope

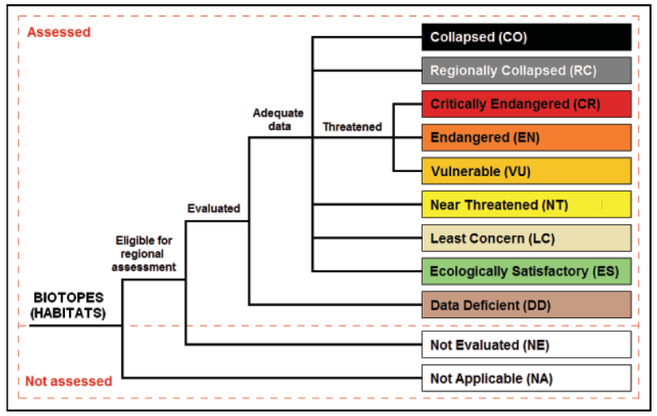
The boundaries of the Carpathians as used for the purpose of this assessment are shown in Figure 1. This map was used in previous projects for development of the Carpathian Biodiversity Information System (CBIS)[14]. This includes borders of 309 orographic units (in eastern Czech Republic, south-eastern Poland, most of Slovakia, northern Hungary, western Ukraine, big part of Romania and small part of eastern Serbia), and the organisation of data collection could be compatible with previous Carpathian projects.

2.3.2 Habitats/biotopes assessment

The IUCN Red List of Ecosystems Categories and Criteria (Rodrigues et al. 2011) were only proposed in the time of developing the Carpathian Red List of habitats. The draft methodology was adapted to the Carpathians to assess the risk of collapse of the forest and non-forest habitat types, or whether they are vulnerable, endangered, or critically endangered, assessing losses in area, degradation or other major changes such as conversion[15]. The present assessment can be considered as a case study to classify and list the ecosystems and document their status and so highlight best practices in ecosystem management.

The proposed IUCN Red List categories for habitats are similar to those used by the IUCN for the assessment of species (IUCN 2001). The structure of the categories and their relation can be found in Fig. 2. The threatened habitats are categorized either as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU). 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). Habitats that are in a state of their ecological optima and are without threat, 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. Biotopes (habitats) that have collapsed throughout their distribution area 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) (Barančok et al. 2014).

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



In order to create the Carpathian Red List of threatened biotopes (habitats) the development of national red lists of biotopes (habitats) was proposed. The special forms and database were developed for forest and non-forest habitats to collect data from all Carpathian countries with the agreed structure, consistent with the Guidelines for Application of IUCN Red List Criteria at Regional Levels (IUCN 2003) and categories and criteria proposed for use in developing a red list of ecosystems by Rodrigues et al. (2011).

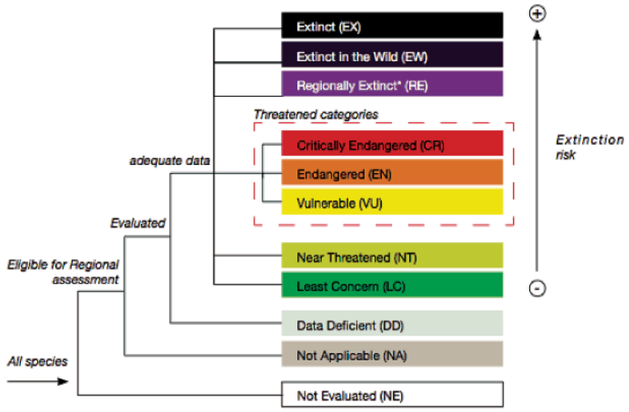
Biotopes (habitats) in categories CO, RC, CR, EN, VU, NT, LC, ES and DD were selected as a basis for creation of draft Carpathian Red List. Final categorisation of the biotopes (habitats) on Carpathian level was done after common consultations and workshops of expert teams.

2.3.3 Species assessment

The conservation status of the Carpathian species at regional level was assessed using the *2001 IUCN Red List Categories and Criteria: Version 3.1* (IUCN 2001, 2012a) and the *Guidelines for Application of IUCN Red List Criteria at Regional Levels* (IUCN 2003, 2012b).
The structure of IUCN Red List categories at regional level is the following:

[15] *http://www.iucnredlistofecosystems.org/*

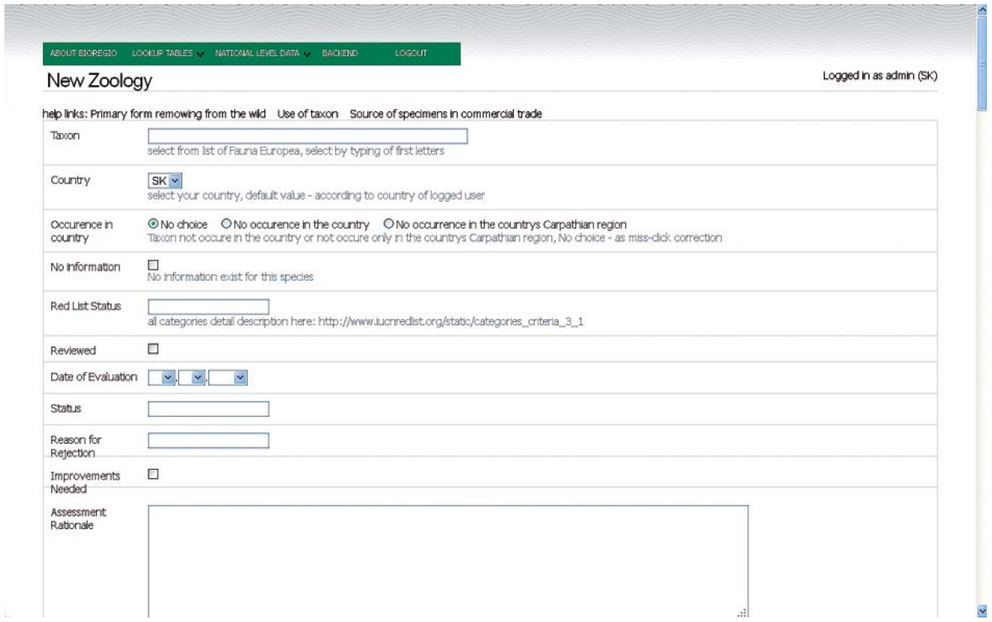
Figure 3. IUCN Red List categories for species at regional level (IUCN 2012b).

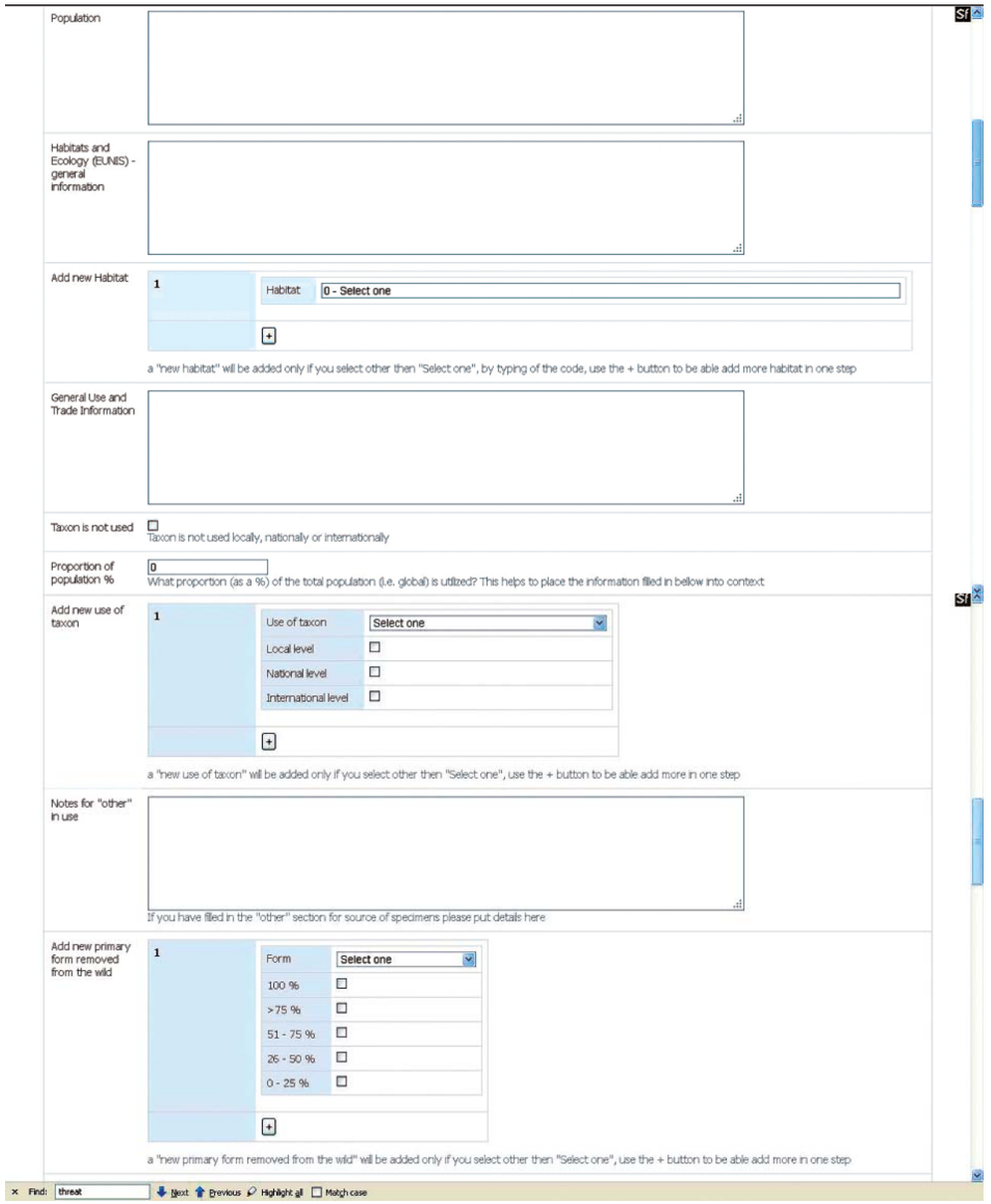


In the preparatory phase of the assessment the project partners were asked to use the most recent version of the national Red List or to create / update national Red Lists of Carpathian species using consistent Guidelines for Application of IUCN Red List Criteria at Regional Levels (IUCN 2003, 2012b).

The idea was to make an overview of all taxa (checklists) that are categorised in every Carpathian country. National lists of these taxa from each country were included in the on-line data forms developed specially for this project in order to harmonise data collection and assessment procedure and documentation (Fig. 4).

Figure 4. Structure of the on-line form for species assessment.





Notes for "other" in form of removing

If you have filled in the "other" section for primary forms removed from the wild please write details here

Add new source of specimens in commercial trade

1

Source	Select one
100 %	☐
>75 %	☐
51 - 75 %	☐
26 - 50 %	☐
0 - 25 %	☐

a "new source of specimens" will be added only if you select other then "Select one", use the + button to be able add more in one step

Notes for "other" in sources of specimens in commercial trade

If you have filled in the "other" section for source of specimens please put details here

Wild 5 years offtake trend

Trend in the level of wild offtake/harvest in relation to total wild population numbers over the last five years

Wild 5 years offtake trend

Trend in the level of wild offtake/harvest in relation to total wild population numbers over the last five years

Domestic 5 years offtake trend

Trend in the amount of offtake/harvest produced through domestication/cultivation over the last five years

Threats - general information

Add new Threats

1

Threat	0 - Select one
past	☐
present	☐
future	☐

a "new use threat" will be added only if you select other then "Select one", use the + button to be able add more in one step

Conservation - general information

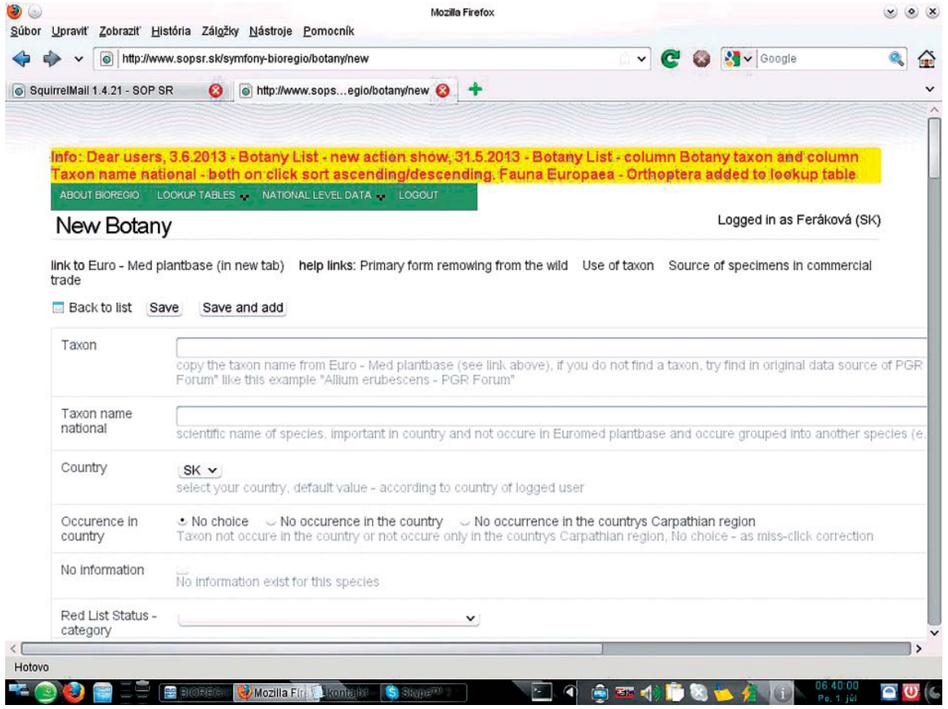
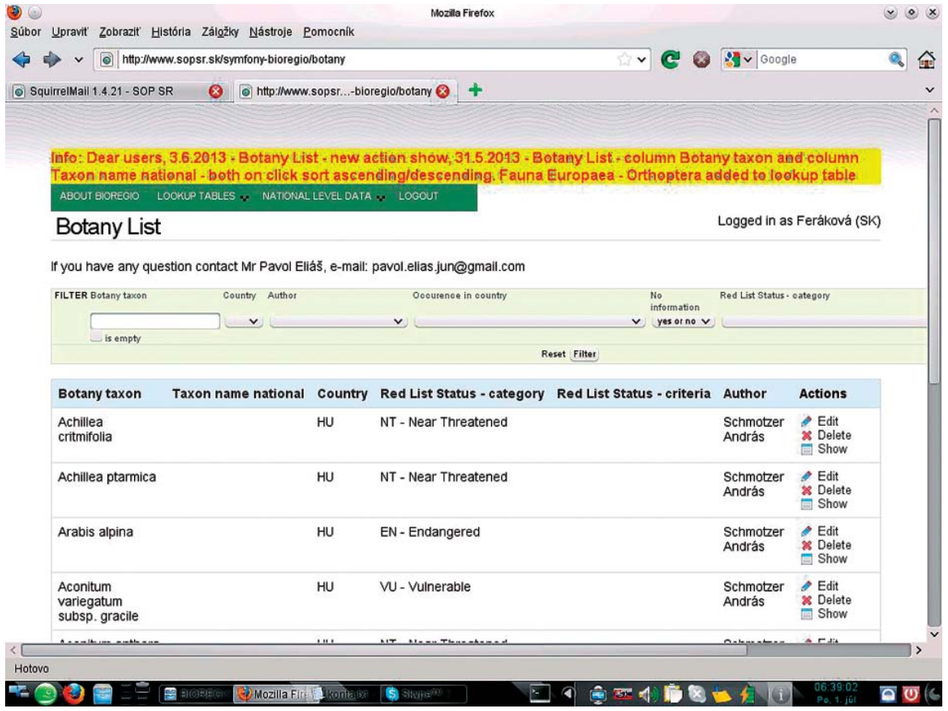
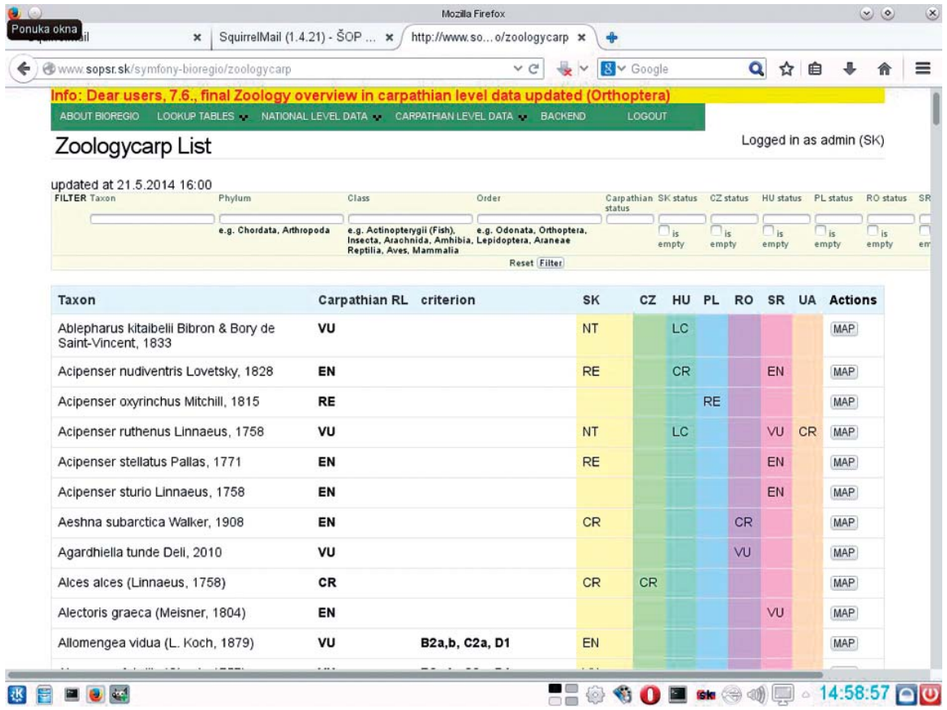


Figure 5. Example of the data evaluated at national level.



Evaluation on regional level took into consideration the information of Global Red List[16] and of European red lists[17] .

Figure 6. The database allows to compare results and to generate maps.



2.3.4 Invasive Alien Species assessment

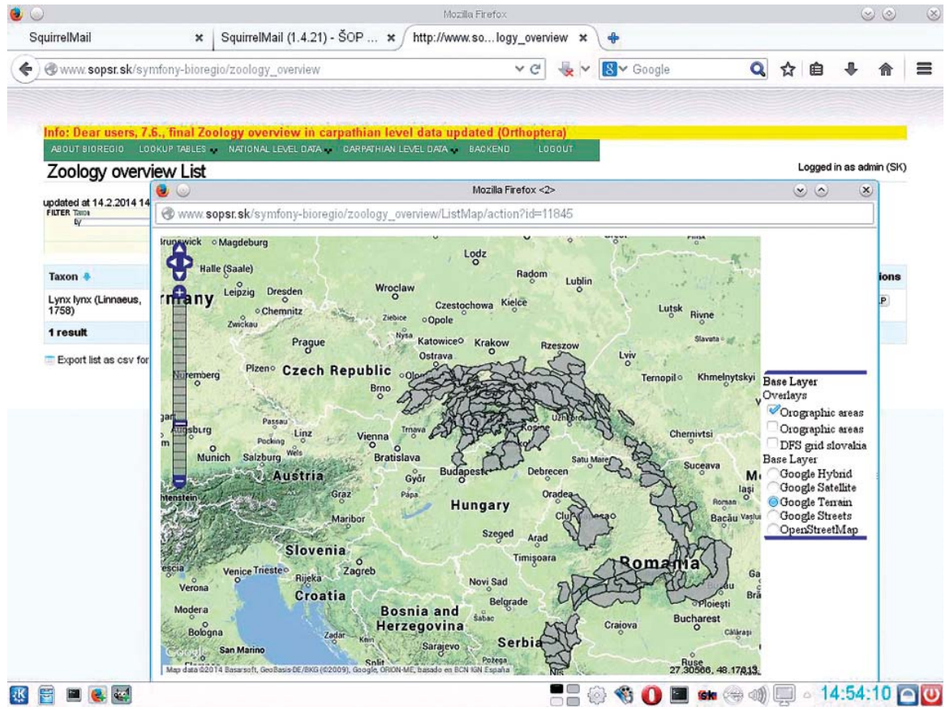
For compiling the Carpathian List of Invasive Alien Species (IAS) were used flora and fauna databases, catalogues or lists of alien species or lists of IAS already existing in the project countries.

For alien species or IAS were used definitions of the Convention on Biological Diversity (CBD) for the purpose of the CBD *Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats or Species* (annexed to CBD Decision VI/23)[18] as follows:

- **alien species:** a species, subspecies or lower taxon, introduced outside its natural past or present distribution, includes any part, gamets, seeds, eggs or propagules of such species that might survive and subsequently reproduce;
- **invasive alien species:** an alien species whose introduction and/or spread threaten biological diversity;
- **introduction:** the movement by human agency, indirect or direct, of an alien species outside of its natural range (past or present). This movement can be either within a country or between countries or areas beyond national jurisdiction.
- **intentional introduction:** the deliberate movement and/or release by human of an alien species outside its natural range
- **unintentional introduction:** all other introductions which are not intentional

For listing a particular species the assessment of the species was done and it took into account its taxonomic identity, time of immigration and invasion status. When

[16] *www.iucnredlist.org*
[17] *www.iucnredlist.org/europe and http://ec.europa.eu/environment/nature/conservation/species/redlist*
[18] *http://www.cbd.int/decision/cop/?id=7197*



defining the status of a species in a region/country some factors were taken into account: origin status (whether the taxon is native or alien to the region/country), residence status (when was the taxon introduced and what its position is in the invasion process) and invasion status (what is the degree of its naturalization and possible invasion).

The species were assessed in categories as *casual alien species* (not established), *naturalized alien species* (rare and local), and *invasive alien species* (a naturalized species that produces reproductive offspring, often in very large numbers, and thus have the potential to spread over a considerable area[19].

To establish the database on IAS the on-line form was developed, too.

Assessed were vascular plants, vertebrates and some groups of invertebrates. Species identified as invasive in one of the Carpathian countries were assessed as candidates for the Carpathian List. These were evaluated according to criteria as: number of countries/orographical units and area occupied by the species, impacts on biodiversity (or human health and economy), in some cases invasive potential of the species.

3. Results

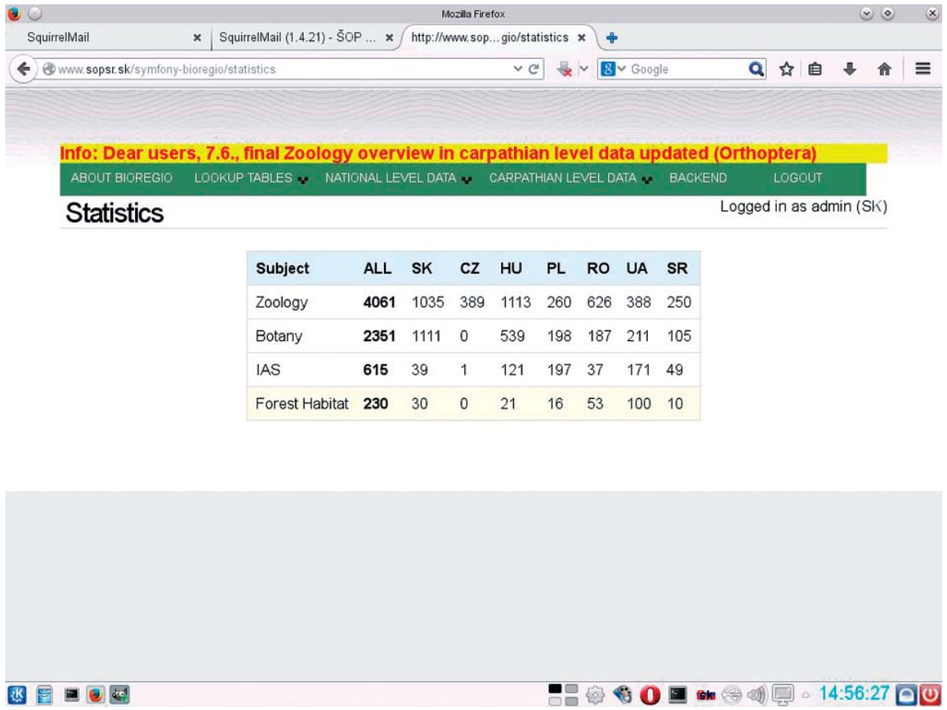
The assessments were organized by team leaders focused on forest habitats (Ivor Rizman), non-forest habitats (Peter Barančok), vascular plants (Peter Turis, Pavol Eliáš jun.), molluscs (Ľubomíra Vavrová), spiders (Peter Gajdoš), dragonfies (Dušan Šácha), orthopterans (Anton Krištín), butterflies (Henrik Kalivoda), fish and lamprey species (Ján Koščo), amphibians, reptiles (Peter Urban), birds (Peter Puchala) and mammals (Peter Urban), and on Invasive Alien Species (Ema Gojdičová).

3.1. Number of red listed and of invasive alien species

Final versions of the Carpathian Red List and the List of Invasive Alien Species are the result of a scientific consensus reached by participating experts. It will be publicised on BioREGIO and Carpathian Convention websites for following discussion and updating. These are the lists of Carpathian habitats and taxa classified in categories, described by criteria, data on endemism and listings in other Conventions (Bern Convention, Bonn Convention) and EU directives (Habitats Directive, Birds Directive). Documentation to each categorised species and distribution maps (mostly on level of orographic units) in the Carpathians are in the databases. The list of IAS listed the species identified in most of the Carpathian countries as invasive and causing problems.

[19] *http://www.bioregio-carpathians.eu/key-outputs-and-publications.html*

Figure 7. The database helps in compiling statistical data.



Subject	ALL	SK	CZ	HU	PL	RO	UA	SR
Zoology	**4061**	1035	389	1113	260	626	388	250
Botany	**2351**	1111	0	539	198	187	211	105
IAS	**615**	39	1	121	197	37	171	49
Forest Habitat	**230**	30	0	21	16	53	100	10

Table 1: Threatened categories of habitats and species assessed in the Carpathians

	IUCN "threatened" categories				
Groups assessed	**CO, EX, (EX?)**	**RC, RE, (RE?)**	**CR (CR(PE))**	**EN**	**VU**
Forest habitats	0	0	13	10	17
Non-forest habitats	0	0	10	26	69
Vascular plants	(1)	20 (13)	95 (3)	135	219
Mollusca	0	0	1	6	30
Araneae	0	5	8	44	114
Odonata	0	0	0	4	5
Orthoptera	0	0	0	10	10
Lepidoptera	0	2	0	25	27
Petromyzontes, Osteichthyes	0	2	2	7	16
Amphibia	0	0	0	0	6
Reptilia	0	0	1	3	3
Aves	0	1	5	14	8
Mammalia	1	0	2	3	17

Legend: CO = Collapsed (for habitats); EX = Extinct; EX? = probably extinct (for species); RC = Regionally Collapsed; RE = Regionally Extinct; RE? = probably regionally extinct; CR = Critically Endangered; CR(PE) = Critically Endangered (possibly extinct); EN = Endangered; VU = Vulnerable

This report is the first summary of the draft red lists of habitats and species and of the black list of invasive alien species of the Carpathians on which the Carpathian Convention can build.
The overview of the results of assessments of the risk of collapse/extinction of habitats and species at the regional (Carpathian) level is in the Table 1.

Forty forest habitat types were classified in some of the categories of threat, while 105 non-forest habitat types are threatened in the Carpathian region. 21 vascular plant species already disappeared from the region and 13 species are probably regionally extinct in the Carpathians. Additional about 450 plant species are considered threatened in the region. In the selected groups of invertebrates are threatened 37 species of molluscs, 166 species of spiders (5 regionally extinct), 9 species of dragonflies, 20 species of orthopterans, 52 species of butterflies (and 2 are regionally extinct). The most threatened group of vertebrates are birds (27 species and 1 regionally extinct), fishes (25 species, 2 regionally extinct), mammals (22 species), for reptiles were identified 7 threatened species and for amphibians 6 species.
This information will help to put national conservation priorities into a Carpathian context, thus maximising the effectiveness of local and national conservation measures, and facilitating the development of integrated regional conservation strategies.
As for the invasive alien species in the final table were included identified vascular plants, molluscs, malacostracans (a group of crustatians), orthopterans, true bugs (Hemiptera), butterflies, beetles, reptiles and mammals.

Table 2: Invasive alien plant and animal species in the Carpathians

Groups assessed	Vascular plants	Mollusca	Malacostraca	Orthoptera	Hemiptera	Lepidoptera	Coleoptera	Osteichthyes	Reptilia	Mammalia
Number of species	37	11	1	1	2	6	4	10	1	4

The list of invasive alien species includes 77 taxa (37 plant species and 40 animal species). From plant species, 32 are herbs and 5 woody plants. Majority of animal species are Invertebrates, 14 arthropods and 11 molluscs are listed. The most numerous group of invasive Vertebrates are fishes (with 10 species on the list).

3.2 Major threats identified in the different assessments

Some species and habitat types have naturally restricted range and they occur in low densities with limited dispersal and these are especially sensitive to any change in the habitat structure or in the surrounding areas. Other species or habitats are relatively well distributed but are facing increasing pressure. Main threats to species in the Carpathians are:

- Habitat loss, degradation, destruction, fragmentation or alteration
  - deforestation, intensive logging, decreasing of area of virgin and old-growth forests, removal of dead wood from forests;
  - afforestation of non-forest areas, e.g. dry rocky habitats, wet grasslands, changes in land use, agriculture intensification, overgrazing on one hand and land abandonment on the other, decline in traditional farming and management, grass cutting and grazing and following succession leading to overgrowing by shrubs and trees, etc.;
  - forest fires;
  - changes in character of water bodies and sediments, water regime mismanagement, loss of temporary freshwater habitats, e. g. seasonal ponds and other wetlands, water abstraction building of migration barriers, fragmentation of rivers, dam, hydropower construction;
  - water pollution;
  - degradation of wetlands generally, or some specific habitats, e.g. springs, peat excavation;
  - intensive fish farming;
  - human settlement expansion, infrastructure development;
  - climate change and resulting habitat changes
- Human disturbance – tourism, rock climbing, paragliding, winter sports and infrastructure (roads, hotels etc.);
- Air pollution;
- Use of pesticides, especially insecticides and other chemicals, pest control;
- For many vertebrates road mortality, hunting, animal crime – poaching, illegal shooting, poisoning, deliberate persecution; for birds collisions with electric lines;
- Introduction and expansion of alien species.

4. Recommendations and conclusions and future challenges

The Red Lists of Carpathian habitats and species are important source of information on the current status of habitat types and populations of threatened species in the region. The list could be an essential guide to conservation efforts focused on threatened habitats and species. As several times mentioned above the present lists are drafts based on recently available data and knowledge that are in many cases not sufficient for objective assessment. Future research should be focused on collecting data necessary for the habitats and species classification according to the IUCN Red List Criteria. It is important to regularly monitor the ecosystems, species, their population size and trends as well as quality of their habitats. Priority should be given to habitats and species classified as threatened (category CR, EN and VU) and those of the European and national importance.

The special consideration should be given to alien species identified as invasive and causing biodiversity, health, economic or other difficulties and impacts.

The presented lists can be very useful guide for common action of all Carpathian countries and for developing of thematically focused strategies on Carpathian level. It would also help to monitor conservation actions and their results.

These assessments are now submitted for review, especially by specialists (e.g. members of IUCN SSC Specialist Groups) and experts with sufficient overview and information on Carpathian-wide or European situation of the groups or species concerned, with the hope that national supporting information can be improved any time in the project database, but the wider regional knowledge is applied. Updating on species distribution, population size and trend and threats are activities we should focus on.

Revision of the compiled red lists and the list of invasive alien species is expected to be done every twelve years[20], however for some groups it may be too long period when these are under stronger pressure, or are spreading dramatically and would require more frequent review. During the BioREGIO project it was possible to elaborate red lists only for the limited number of animal groups and it is necessary to continue in this work in follow-up projects (at least for other relatively well-studied groups). It is strongly recommended to involve from the very beginning relevant data holders (scientific institutions and experts) with scientific approach and good motivation for the most comprehensive results and using of the as complete data as possible.

During elaboration of red lists there was identified necessity for further work on endemic species. Endemism was one of the attributes considered in assessing the conservation status of Carpathian taxa and compiling the final tables of threatened species. However there is not harmonized approach to and understanding of the endemics in the Carpathian countries and the approaches vary much in the region. So far there is not elaborated comprehensive study on the Carpathian-wide endemic taxa, however compiling and analysis of data concerning endemic species is included as one of the actions (Action 3.1.) of the Strategic Action Plan for the Implementation of the Biodiversity Protocol to the Carpathian Convention.

Increasing recognition of the impact of invasive alien species will lead to developing the indicators of biological invasions (European Environment Agency 2012). This case study can help in the development of reliable indicators based on the impact of IAS and in common interpretation of invasiveness and methodological approaches and finally in prioritisation of actions in the Carpathians.

4.1 Prioritizing of efforts for assessing and reassessing species taxonomic groups and habitat types

Carrying out Red List assessments for all species within taxonomic groups that contain many species requires considerable effort and resources. In the near future however there will be necessary to mobilise funds not only for further first assessments for other taxonomic groups characteristic for the Carpathians, but also for reassessments of the submitted groups of species and habitats and this means that this should be the permanent part of the work plan of the Carpathian Convention, but also of its parties. This is vital for using the IUCN Red List as an indicator of biodiversity trends over time. So it is important to design the assessment and reassessment programmes within the Carpathian Convention to be sustainable and cost-effective. To achieve this it will be necessary to establish the permanent working group (sub-group) on Carpathian Red Lists (and on Invasive Alien Species) and to include in the biodiversity strategy and work plan request to continue in assessing published literature (scientific and popular) and unpublished reports on Carpathian habitats and species, to involve key experts (e.g. through workshops, by email, and/or open-access web-based discussion fora) in these processes, analysing monitoring datasets to determine population trends, assessing remote-sensing data to determine rates of habitat loss, promoting, advocating, supporting and or/funding fieldwork to gather new relevant data on threatened habitats, species, but also on invasive alien species.

[20] *Action 3.1.d) of the Strategic Action Plan for the Implementation of the Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity to the Framework Convention on the Protection and Sustainable Development of the Carpathians*

Acknowledgments

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DRAFT CARPATHIAN RED LIST OF FOREST HABITATS

Compiled by Ivor Rizman

Contributors to the compiling of the Red List: Réka Aszalos (Hungary), **Wojciech Mróz, Monika Szewczyk** (Poland), **Iovu Biris** (Romania), **Ivor Rizman**, **Ľudovít Vaško** (Slovakia), **Dejan Bakovic** (Serbia), **Myroslav Kabal**, **Mykola Voloshchuk** (Ukraine)

Methodology for compiling the Carpathian Forest Habitats "Red List"

To establish the Red List of Forest Habitats we adopted proposed methodology of IUCN and published by Rodriguez et al. (2011) (Table 1). For considering only Carpathians level on Criterion D we lower the world limits proportionally. For non-endemic habitats we lower the limits twice and for endemic ones we use the limits from the proposed Rodriguez limits. Criterion C we did not use.

For Criterion A Short-term decline (in distribution or ecological function) were used only estimations and data of country experts, because no real data exist in these countries. The Natura 2000 habitat mapping and monitoring is only starting in these years and the local (mostly short time) studies are not fully usable for country level estimation.

For Criterion B Historical decline (in distribution or ecological function) we collected data for current distribution of all EUNIS habitat types occurred in the countries and for historical data we used the country maps of potential vegetation. We are aware that this is not the same as the habitats distribution 500 years ago, but it considers the overall decline, through human influence. Especially in the Carpathians, where mostly forest communities would potentially occurred, this approach is good for considering total historical decline.

For sub-criteria which deal with a reduction or likely reduction of ecological function we collected the data about current status of forest habitats. Under status A (the best status of habitat) we consider virgin forests and old growth forests. In some types there are no residues of such types of forests at all. This fact reflects strong reduction of ecological function. In some types, experts also considered the fact of forest health status (Picea forests, Pinus forest etc.) Experts also consider spreading of invasive and alien species in floodplain forests.

For collecting data about threats we used the list of threats of Natura 2000 Standard Data Form.

Not all countries provided the data into database. There are missing data for the Czech Republic at all, and from some countries we have only partial data without distribution. But for establishing the preliminary list we consider the collected data as sufficient (the full data-sets from Romania, Hungary, and Slovakia, partly from Poland, Ukraine and Serbia).

The collected list of forest EUNIS habitats (communities) was merged to appropriate upper level of EUNIS catalogue. So similar units where merged into one unit when it was possible, and lower units were included into the same IUCN status category.

Weaknesses of this Red List (methodological approaches and results):

The data about all distribution (past, current future) are only experts opinions, in most countries there was no real vegetation mapping. The monitoring of habitats only started in some countries and there are no exact data about short time decline and about the decline in function at all.

Our approach mostly considers the data about total historical decline.

We did not consider the fact that some habitats are (strictly) protected by law currently and included into some category of protected areas.

We also did not consider that some forest habitats are protected against human influence, because they are included into protective forest category and also the fact that forest cover and status is regulated and "protected" also by forestry law.

The list should be considered as very preliminary Red List, which should be commented and revised according to new data and adapted list of limits and criteria and sub criteria. The list was created with respect of precautionary principle of the Carpathians Convention.

Collected data from countries can be found in the database and after two expert meetings in Banska Bystrica merged and evaluated data were filled in also for the Carpathian level in this structure:

1. Potential area of distribution in hectares according to maps of potential vegetation for forest habitats (alliances) or estimated area of distribution 500 years ago.
2. Estimated area 50 years ago

Table 1: Used Criteria and Sub-criteria for Red List Status [a] (Rodriguez et al. 2011)

Criterion	Sub-criterion - Status[b]
A: Short-term decline (in distribution or ecological function) on the basis of any sub-criterion	**1. observed, estimated, inferred or suspected decline in distribution of** ≥80% - **CR**, ≥50% - **EN**, or ≥30% - **VU** over the last 50 years.
	2. projected or suspected decline in distribution of ≥80% - **CR**, ≥50% - **EN**, or ≥30% - **VU** within the next 50 years.
	3. observed, estimated, inferred, projected, or suspected decline in distribution of ≥80% - **CR**, ≥50% - **EN**, or ≥30% - **VU** over any 50-year period, where the period must include both the past and the future
	4. relative to a reference state appropriate to the ecosystem, a reduction or likely reduction of ecological function that is (a) very severe, in at least one major ecological process, throughout ≥80% of its extant distribution within the last or next 50 years - **CR**; (b1) very severe, throughout ≥50% of its distribution within the last or next 50 years - **EN** (b2) severe, in at least one major ecological process, throughout ≥80% of its distribution within the last or next 50 years - **EN**; (c1) very severe, in at least one major ecological process, throughout ≥30% of its distribution within the last or next 50 years - **VU** (c2) severe, in at least one major ecological process, throughout ≥50% of its distribution within the last or next 50 years - **VU** (c3) moderately severe, in at least one major ecological process throughout ≥80% of its distribution within the last or next 50 years - **VU**
B: Historical decline (in distribution or ecological function) on the basis of either sub-criterion 1 or 2	**1. estimated, inferred, or suspected decline in distribution of** ≥90% - **CR**, ≥70% - **EN**, or ≥50% - **VU** in the last 500 years
	2. relative to a reference state appropriate to the ecosystem, a very severe reduction in at least one major ecological function over ≥90% - **CR**, ≥70% - **EN**, or ≥50% - **VU** of its distribution in the last 500 years.
C: Small current distribution and decline (in distribution or ecological function) or very few locations on the basis of either sub-criterion 1 or 2	**1. extent of occurrencec estimated to be** ≤100 km2 - **CR**, ≤5,000 km2 - **EN**, or ≤20,000 km2 - **VU** and at least one of the following: (a) observed, estimated, inferred, or suspected continuing decline in distribution, (b) observed, estimated, inferred, or suspected severe reduction in at least one major ecological process, (c) ecosystem exists at only one location - **CR**, 5 or fewer locations - **EN**, or 10 or fewer locations - **VU** or

	2. area of occupancyc estimated to be ≤10 km² - **CR**, ≤500 km² - **EN**, or ≤2000 km² - **VU** and at least one of the following: (a) observed, estimated, inferred, or suspected continuing decline in distribution, (b) observed, estimated, inferred, or suspected severe reduction in at least one major ecological process, (c) ecosystem exists at only one location - **CR**, 5 or fewer locations - **EN**, or 10 or fewer locations - **VU**
D: Very small current distribution	≤5 km² - **CR**, ≤50 km² - **EN**, or ≤100 km² - **VU**, and serious plausible threats, but not necessarily evidence of past or current decline in area or function.

a) Based on the IUCN Red List (IUCN 2001) and other systems proposed to date (Nicholson et al. 2009).
b) Abbreviations: CR, critically endangered; EN, endangered; VU, vulnerable.
c) See IUCN (2001, 2010b) for guidelines on measuring extent of occurrence and area of occupancy.
[Correction added after publication 5 November 2010: Errors in the second column of Criterion D were amended.]

3. Estimated area 10 years ago
4. Current area
5. Status A – area (in forest the area of primeval (virgin) forest)
6. Estimated trend in the next 10 years
   - - Trend negative
   - -- accelerated negative within the last 10 years
   - +/- Trend largely stable
   - + Trend positive
   - ++ accelerated positive in the next 10 years
   - ? Trend cannot be determined
7. Estimated trend in the next 10 years
8. Evaluating of regenerability
   - N - Not regenerable
   - M - Minimal regenerability (> 150 years)
   - V - Very limited regenerability (15-150 years)
   - L - Limited regenerability (up to 15 years)
   - X - Ranking not meaningful
9. Endemic Alliance in the Carpathians
   - Y - yes
   - N - no
10. Negative Threats to the area or status – maybe possible to fill more than one but according to some possible (prepared) values
11. Proposed IUCN Category in the Country (not for Orographic unit)
12. Used sub criterion by Rodriguez
13. Name of the national expert

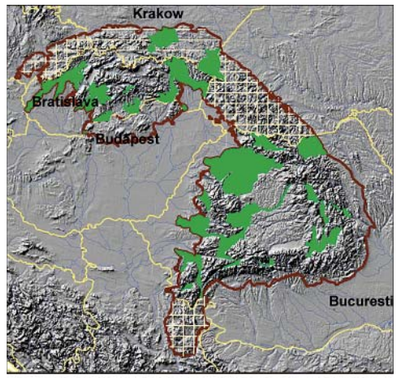
Carpathian Endangered Forest Habitats

G1.1112 - Eastern European poplar-willow forests

Red List Status: CR
Criterion: B1 ≥ 90, B2 ≥ 90 %, A3 ≥ 50 %, A2 ≥ 50 %, A4a, D ≤ 2500 ha

Arborescent galleries of tall *Salix alba*, *Salix fragilis*, *Salix x rubens*, *Populus nigra* and sometimes *Populus alba*, lining lowland, hill or submontane rivers of nemoral and boreo-nemoral Eastern Europe and of eastern and southeastern Central Europe, including eastern Germany, the Baltic States, Poland, the Czech Republic, Slovakia, the nemoral parts of Danubian and Balkan states, nemoral Belarus, the Ukraine and Russia, east to Bashkiria.

Geographical distribution in the Carpathians



Endemic habitat: no
Current area (PL, RO, SK): 900 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
The few remaining semi-natural floodplain forests, particularly in complex with natural accompanying vegetation, are very endangered and worthy of protection.
Estimated trend in the next 10 years: - Trend negative
The main threats are direct devastation of the alluvial vegetation during any works connected with river bed regulation, flood prevention, dams and roads construction, drainage, expansion of invasive alien species and non-native tree species, wood plantations.

Required measures for protection and restitution
Cease cultivation, safeguard the water balance; protection of semi-natural stands.

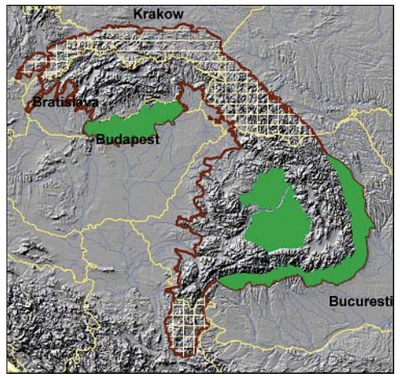
G1.1141 - Pannonic willow and poplar-willow galleries

Red List Status: EN
Criterion: B1 ≥ 70%, D ≤ 2500 ha

Riverine willow-poplar woodlands: Growing on the lower parts of floodplains, these hygrophilous, *Salix* and *Populus* dominated forests presently still get regular flooding.

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, RO): 1160 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
The few remaining semi-natural floodplain forests, particularly in complex with natural accompanying vegetation,



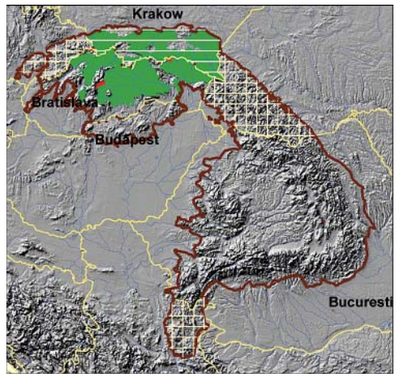
are greatly endangered and worthy of protection.
The main threats are drainage, invasive alien species, wood plantations, spreading of non-native tree species.

Required measures for protection and restitution
Cease cultivation, safeguard the water balance; protection of semi-natural stands.

G1.1213 - Hercynio-Carpathian grey alder galleries

Red List Status: EN
Criterion: B1 ≥ 70%, B2 ≥ 70%,

Alnus incana galleries of the montane rivers of the western and northern Carpathians and of the Hercynian ranges of the Bohemian Quadrangle.



Geographical distribution in the Carpathians
Endemic habitat: no
Current area (PL, SK): 5844 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
Natural and semi-natural remnants of grey alder forests only rarely occur and are severely endangered.
Causes of endangerment are clearing, spruce plantation, grazing, infrastructure development (dams, roads...), stream regulations.

Required measures for protection and restitution
Maintaining the natural tree species composition and water regime of the area. Selection and total protection of semi-natural typical remnants.

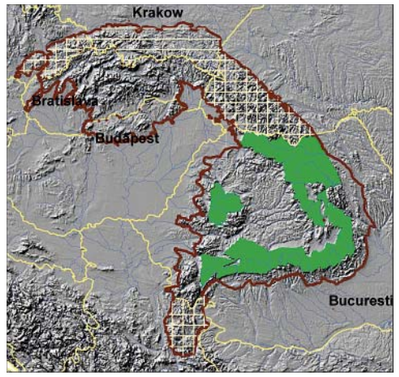
G1.1214 – Eastern Carpathian grey alder galleries

Red List Status: EN
Criterion: B1 ≥ 70, B2≥50%, $D_{endemic}$ ≤ 5000 ha

Alnus incana galleries along the upper reaches of Eastern Carpathian valleys, with regional species *Telekia speciosa*, *Petasites kablikianus*, *Symphytum cordatum*, *Pulmonaria rubra*, *Leucanthemum waldsteinii*, which replace the pioneer willow scrubs of the *Salici purpureae-Myricarietum*.

Geographical distribution in the Carpathians
Endemic habitat: yes
Current area (RO): 600 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
Natural and semi-natural remnants of grey alder forests only rarely occur and are severely endangered.
Causes of endangerment are clearing, spruce plantation,



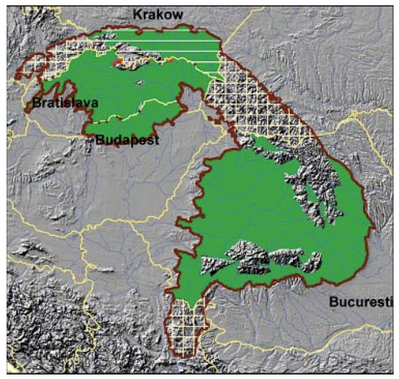
grazing, infrastructure development (dams, roads...), stream regulations.

Required measures for protection and restitution
Maintaining the natural tree species composition and water regime of the area. Selection and total protection of semi-natural typical remnants.

G1.21 – Riverine Fraxinus – Alnus woodland, wet at high but not at low water

Red List Status: EN
Criterion: B1≥70%, B2≥70%

Riparian forests of *Fraxinus excelsior* and *Alnus glutinosa*, sometimes *Alnus incana*, of middle European and northern Iberian lowland or hill watercourses, on soils periodically inundated by the annual rise of the river level, but otherwise well-drained and aerated during low-water; they differ from riparian alder woods within units G1.41 and G1.52 by the strong representation in the dominated layers of forest species not able to grow in permanently waterlogged soils.



Taxonomic note
Habitat includes the following sub-units:
G1.211: [Fraxinus] – [Alnus] woods of rivulets and springs
G1.2111: Sedge ash-alder woods
G1.2112: Fontinal ash-alder woods
G1.2113: Cabbage thistle ash-alder woods
G1.2114: Hillside spring ash-alder woods
G1.2115: Great horsetail ash-alder woods
G1.2116: Dacio-Moesian ash-alder woods
G1.212: [Fraxinus] - [Alnus] woods of fast-flowing rivers
G1.2121: Collinar stream ash-alder woods
G1.2122: Submontane Hercynian stream ash-alder woods
G1.2123: Pre-Carpathian stream ash-alder woods
G1.213: [Fraxinus] - [Alnus] woods of slow rivers
G1.2131: Central European slow river floodplain woods
G1.2132: West European tall herb ash-alder woods

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, PL, RO, SK): 8000 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
Representative stands of these site-determined permanent communities are still to be found in some regions in small areas, nevertheless the ash-alder forest should be considered as a quite severely endangered form. Its habitat is still being deforested and used as grassland to the extent that small residual strips are all that remain along the river courses.
Main threats are droughts and less precipitation, running water course regulations and ground water table lowering.
Required measures for protection and restitution
Preservation of alluvial plains by different kinds of protective measures is required.

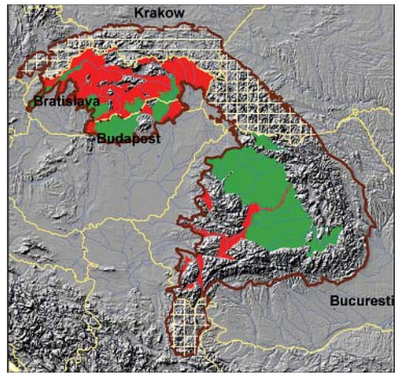
G1.2233 - Pannonic ash-oak-alder forests

Red List Status: CR
Criterion: B1≥90%, A4a, D ≤ 2500 ha

Riverine gallery forests of the Pannonic region, characteristic of the Danube basin, north to the lower Morava, of the Tisza basin and of the Danube-Tisza interfluve. They are dominated by *Quercus robur* and *Fraxinus angustifolia* ssp. *pannonica*, sometimes with *Ulmus laevis*, *Alnus glutinosa*, *Carpinus betulus* and, in the wettest parts, *Populus alba*. The shrub layer includes *Acer campestre*, *Acer tataricum*, *Cornus sanguinea*, *Crataegus monogyna*, *Corylus avellana*, *Ulmus minor*. The herb layer is dominated by *Carex acutiformis*, *Carex elata*, *Carex riparia*, *Urtica dioica*, *Urtica kioviensis* in the wetter belt („*Fraxino pannonicae-Alnetum*"), by *Deschampsia cespitosa*, *Veratrum album*, *Polygonatum latifolium*, *Symphytum officinale* otherwise.

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, RO, SK): 2210 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
The few remaining semi-natural floodplain forests, particularly in complex with natural accompanying vegetation, are greatly endangered and worthy of protection.
Threats – drainage, wood plantations, invasive alien species, Pathogens / parasites, infrastructure development (dams), change of water regime

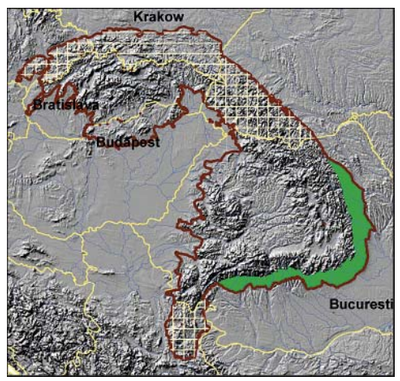


Required measures for protection and restitution
Protection of semi-natural stands. Maintaining the natural tree species composition and water regime of the area.

G1.2234 – Getic oak-elm-ash forests

Red List Status: CR
Criterion: B1≥90%, A4a, D ≤ 2500 ha

Riverine forests of *Quercus robur*, *Quercus pedunculiflora*, *Fraxinus angustifolia*, *Fraxinus pallisiae*, *Ulmus minor* and *Ulmus effusa* of the great floodplains of the lower Danube, with *Cornus sanguinea*, *Viburnum opulus*, *Frangula alnus*, *Crataegus monogyna* in the shrub layer and *Rubus caesius*, *Lysimachia nummularia*, *Glechoma hederacea*, *Convallaria majalis* in the herb layer. Diagnostically important species are *Fraxinus pallisae*, *Quercus pedunculiflora*, *Fraxinus angustifolia* subsp. *danubialis*, *Quercus robur*; *Asperula taurina*, *Asparagus tenuifolius*, *Carex tomentosa*, *Euphorbia palustris*.



Geographical distribution in the Carpathians
Flood plains in the eastern part of the Danube plains (Romania).
Endemic habitat: no
Current area (RO): 650 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
All alluvial forests have been damaged; some well-preserved alluvial forest stands are especially worthy of protection, particularly in complex with the natural accompanying vegetation.
Main threats are droughts and less precipitation, running water course regulations and ground water table lowering, wood plantations, poor recruitment/ reproduction/ regeneration.

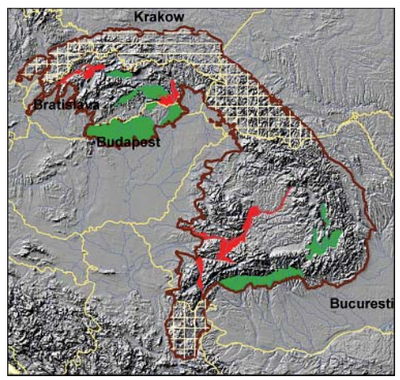
Required measures for protection and restitution
Strict protection of the semi-natural remnants.

G1.411 – Meso-eutrophic swamp alder woods

Red List Status: CR
Criterion: B1≥90%, A1≥80%, D≤250 ha

Mesotrophic and meso-eutrophic *Alnus glutinosa* swamp woods of middle European and western Siberian, nemoral and sub-boreal, marshy depressions, with *Carex elongata*, *Thelypteris palustris*, *Dryopteris cristata*, *Osmunda regalis*, *Solanum dulcamara*, *Calystegia sepium*, *Ribes nigrum*, *Calamagrostis canescens* and often, in acidocline variants, *Betula pubescens*. The constancy of *Carex elongata* is characteristic on the continent, less so in Britain. Tall sedges, *Carex paniculata*, *Carex acutiformis*, *Carex elata*, often dominate the herb layer in the most humid types.

Taxonomic note
Habitat includes the following sub-units:
G1.4112: Elongated-sedge swamp alder woods
G1.4115: Eastern Carpathian [Alnus glutinosa] swamp woods



Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, RO, SK): 200 ha

Primeval virgin forest: 0 ha

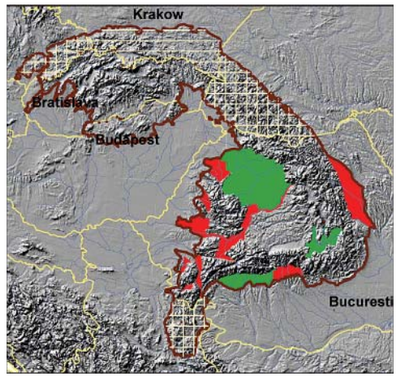
Assessment rationale and causes of endangerment
Semi-natural stands with an intact water balance are rare, and usually preserved only in small areas; often a defective water balance.
Main threats are drainage, groundwater subsidence, eutrophication; forest clearance, stand transformation: forest grazing, pasturing, straw meadows; crop field utilisation after drainage and upheaval.

Required measures for protection and restitution
Strict protection of all semi-natural remnants; regeneration by planting of black alder and natural succession where an intact water balance occurs or after rehydration.

G1.42 – [Quercus] swamp woods

Red List Status: EN
Criterion: B1 ≥ 90, D ≤ 2500 ha, C1c5

Quercus robur-dominated woods of inundated depressions of the Sarmatic region, west to lowlands of eastern Poland and Slovakia, with an accompanying species cortège composed of elements of the *Alnetalia glutinosae*, *Molinietalia*, *Phragmitetalia*, *Caricetalia fuscae* and, to a lesser extent, *Vaccinio-Piceetea* and *Querco-Fagetea*.



Geographical distribution in the Carpathians
Endemic habitat: no
Current area (RO): 1600 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
Semi-natural stands with an intact water balance are rare, and usually preserved only in small areas; often a defective water balance.

Causes of endangerment
Main threats are droughts and less precipitation, running water course regulations and ground water table lowering.

Required measures for protection and restitution
Strict protection of all semi-natural remnants.

G1.5 – Broadleaved swamp woodland on acid peat

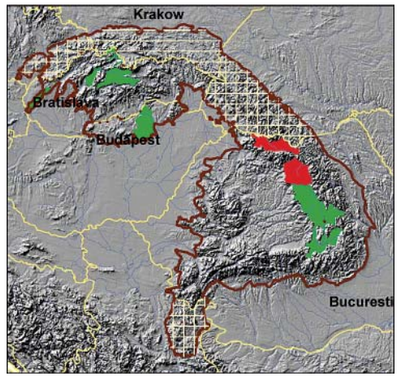
Red List Status: CR
Criterion: B1≥90%, D≤250 ha

Broadleaved woodland on wet acid peat, dominated by *Betula pubescens* or rarely *Alnus glutinosa*, sometimes with an admixture of conifers or shrubby *Salix species*. *Sphagnum* spp. are normally prominent in the ground vegetation.

Taxonomic note
Habitat includes the following sub-units:
G1.51: Sphagnum [Betula] woods
G1.52: [Alnus] swamp woods on acid peat

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, RO, SK): 140 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
Semi-natural stands with an intact water balance are rare, and usually preserved only in small areas; often a defective water balance.
Main threats are drainage, groundwater subsidence, eutrophication; forest clearance, stand transformation: forest grazing, pasturing, straw meadows; crop field utilisation after drainage and upheaval.



Required measures for protection and restitution
Strict protection of all semi-natural remnants; regeneration by planting of black alder and natural succession where an intact water balance occurs or after rehydration.

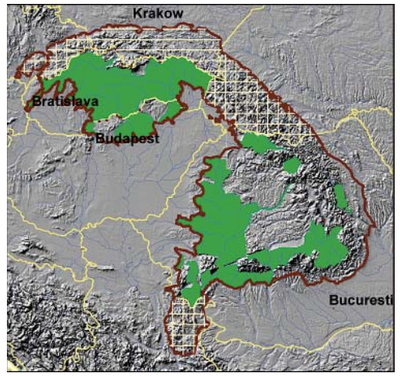
G1.611 – Medio-European collinar woodrush beech forests

Red List Status: VU
Criterion: B1≥50%

Acidophilous *Fagus sylvatica* forests of the lesser Hercynian ranges and Lorraine, of the collinar level of the western greater Hercynian ranges, the Jura and the Alpine periphery, of the western sub-Pannonic and the intra-Pannonic hills, not or little accompanied by spontaneous conifers, and generally with an admixture of *Quercus petraea*, or in some cases *Quercus robur*, in the canopy.

Taxonomic note
Habitat includes the following sub-units:
G1.6115: Pannonic collinar woodrush beech forests
For the collinar Western Carpathian acidophilous Fagus sylvatica forests miss in EUNIS appropriate subunit.

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, RO, SK): 85500 ha
Primeval virgin forest: 5000 ha (RO)



Assessment rationale and causes of endangerment
Only a few semi-natural stands are preserved.
Causes of endangerment are transformation of semi-natural forests into coniferous plantations.

Required measures for protection and restitution
Protection of representative semi-natural forest areas.

G1.6121 – Hercyno-Alpine montane woodrush beech forests

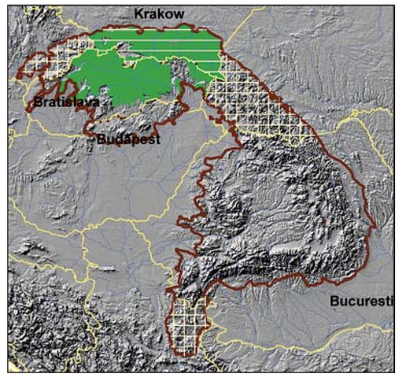
Red List Status: VU
Criterion: B1≥50%, B2≥50%

Acidophilous forests of *Fagus sylvatica*, *Fagus sylvatica* and *Abies alba* or *Fagus sylvatica*, *Abies alba* and *Picea abies* of the montane and high montane levels of the eastern greater Hercynian ranges, the Thüringian Forest, the Swabian and Franconian Jura, the Alps, where they are mostly expressed in the eastern Alps, and, in a dry version, in some parts of the western intermediate Alps, the Carpathians and the Bavarian Plateau, including, in particular, the remarkable near-natural montane woodrush beech forests of the Bayerischer Wald.

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (PL, SK): 81000 ha
Primeval virgin forest: 50 ha – SK, PL ?

Assessment rationale and causes of endangerment
Frequently converted into spruce forests. All nearly-natural stands are worthy of protection as stable structures and gene reserves.
Main threats are transformation of semi-natural forests into forestry, changes in economic use, alteration of sites, clear-cutting, eutrophication (fertilisers) and pollution.

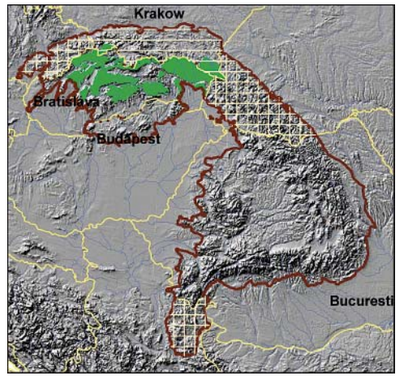
Required measures for protection and restitution
Semi-natural silviculture; natural forest reserves and regeneration areas; the plantation of autochthonous firs should be considered.



G1.65 – Medio-European subalpine [Fagus] woods

Red List Status: VU
Criterion: B1≥50%

Fagus sylvatica woods usually composed of low, low-branching trees, with much sycamore (*Acer pseudoplatanus*), situated near the tree limit, mostly in low mountains with oceanic climate of Western Europe and of central and northern Central Europe, in particular the Vosges, Black Forest, Rhön, Jura, outer Alps, Central Massif, Pyrenees, the mountains of the Bohemian Quadrangle, and, very locally, the Carpathians. The herb layer is similar to that of the forests of unit G1.63 or locally of unit G1.61 and contains elements of the adjacent open grasslands.



Geographical distribution in the Carpathians
Endemic habitat: no
Current area (PL, SK): 8284 ha
Primeval virgin forest: 262 ha - SK

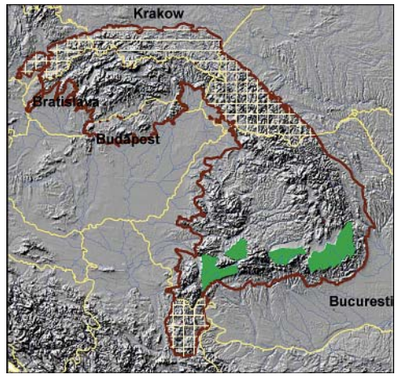
Assessment rationale and causes of endangerment
Habitats often degraded by forest management and natural disasters.
Frequently converted into spruce forests, occupying an area of natural forest stands, clear-cutting and transformation to a forest monocultures, building of recreational facilities (ski resorts), natural disasters. Main threats are extreme environmental conditions, poor regeneration of beech.

Required measures for protection and restitution
Preservation of all semi-natural stands and regeneration of degraded forests as much for their erosion and avalanche protective functions as for any other reason.

G1.6D3 – East Carpathian subalpine beech forests

Red List Status: VU
Criterion: B1≥50%

Local *Fagus sylvatica* and *Fagus sylvatica-Picea* abies forests of the tree-limit in the upper montane or subalpine level of the high southern Carpathians, developed where subalpine *Picea abies* forests do not form an uninterrupted zone, less well individualised than more western formations of the *Aceri-Fagion*, though, like them, characterized by the admixture of *Acer pseudoplatanus* in the canopy and of Adenostyletalia megaphorb species in the understorey.



Taxonomic note
Habitat includes the following sub-units:
G1.6D31: Dacian subalpine beech-spruce forest
G1.6D32: Dacian subalpine gooseberry beech forests

Geographical distribution in the Carpathians
Endemic habitat: yes
Current area (RO): 12000 ha
Primeval virgin forest: 3500 ha

Assessment rationale and causes of endangerment
Main threats are converting into spruce forestry, occupying an area of natural forest stands, clear-cutting and transformation to a forest monocultures, building of recreational facilities (ski resorts), natural disasters, extreme environmental conditions and poor regeneration of beech.

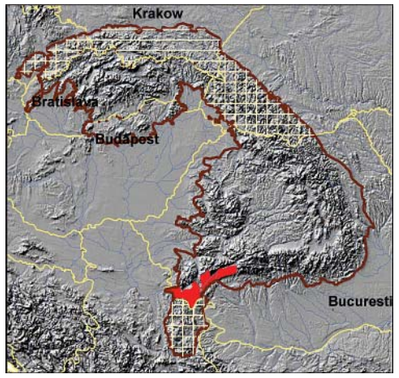
Required measures for protection and restitution
Semi-natural cultivation of the forest; semi-natural remnants of the unit as a characteristic community of the montane landscape is worthy of protection wherever it is encountered.

G1.7373 – Intra-Carpathian insular [Quercus virgiliana] woods

Red List Status: CR
Criterion: B1 ≥ 50, $D_{endemic}$≤500 ha

Xerophile, neutrophilous *Quercus pubescens* and *Quercus virgiliana* woods distributed in insular patches on steep south-facing slopes of intra-Carpathian hills of Romania, in particular, of the foothills bordering the lower Danubian basin of Romania, with *Cotinus coggygria*, *Amygdalus nana*, Cornus mas in the shrub layer and *Astragalus monspessulanus*, *Carex humilis*, *Dictamnus albus*, *Geranium sanguineum*, *Astragalus austriacus* in the herb layer.

Geographical distribution in the Carpathians
Endemic habitat: yes
Current area (RO): 500 ha
Primeval virgin forest: 0 ha



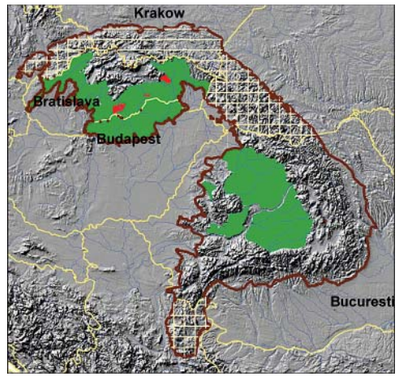
Assessment rationale and causes of endangerment
Current distribution of the habitat covers less than 500 ha. Main threats are clearing, excessive use for low forest management, fires, poor recruitment/ reproduction/ regeneration.

Required measures for protection and restitution
Protection of the few remaining semi-natural forests, ecological restitution of degraded forests.

G1.7374 – Pannonian [Quercus pubescens] woods

Red List Status: VU
Criterion: B1≥50%

Pannonian mixed flowering ash-downy oak forests (*Quercus pubescens*, *Quercus polycarpa*, *Quercus petraea*, *Quercus dalechampii*) with *Fraxinus ornus*, *Cotinus coggygria*, *Vicia sparsiflora*, *Lathyrus pannonicus* subsp. *collinus*.
Diagnostically important species: *Quercus pubescens*, *Prunus mahaleb*, *Fraxinus ornus*; *Cotinus coggygria*, *Hippocrepis emerus*; *Coronilla coronata*, *Vicia sparsiflora*, *Lathyrus pannonicus* subsp. *collinus*, *Carex halleriana*, *Piptatherum virescens*, *Mercurialis ovata*.



Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, RO, SK): 19450 ha
Primeval virgin forest: 32 ha - HU, SK

Assessment rationale and causes of endangerment
Semi-natural stands have diminished substantially, potentially endangered.
Main threats are clearing, grazing, timber use.

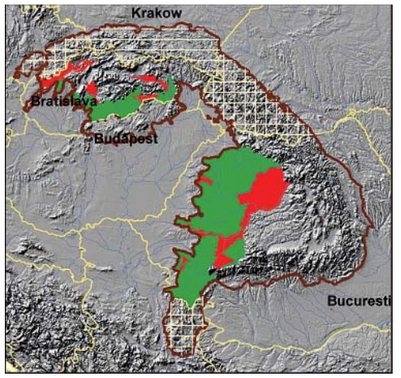
Required measures for protection and restitution
Protection of semi-natural stands.

G1.769 – Getic sub-continental thermophilous oak woods

Red List Status: VU
Criterion: B1≥50%

Sub-continental thermo-xerophile Quercus frainetto-Quercus cerris-Quercus petraea forests of the foothills bordering the lower Danube depression of southern Romania, with the continental *Acer tataricum* and lacking typically sub-Mediterranean species such as *Carpinus orientalis* and *Ruscus aculeatus*.

Taxonomic note
Habitat includes the following sub-units:
G1.7691: Getic white cinquefoil [Quercus cerris] forests
G1.7692: Getic early sedge [Quercus frainetto] forests
G1.7693: Getic crocus [Quercus frainetto]-[Quercus cerris] forests
G1.7694: Getic [Q. frainetto]-[Q. cerris]-[Q. petraea] forests
G1.7695: Getic [Quercus frainetto]-[Quercus petraea] [s.l.] forests
G1.7696: Pre-Carpathian [Quercus cerris]-[Quercus petraea] [s.l.] forests



Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, RO, SK): 160950 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
Very degraded as a result of low forest management, cleared forests, greatly endangered at the northern edge of the range. In the past some surfaces of this habitat were replaced with Scots pine or black locust plantations.
Main threats are low forest management, transformation, oak decline, invasive alien species, change in native species dynamics (directly impacting habitat).

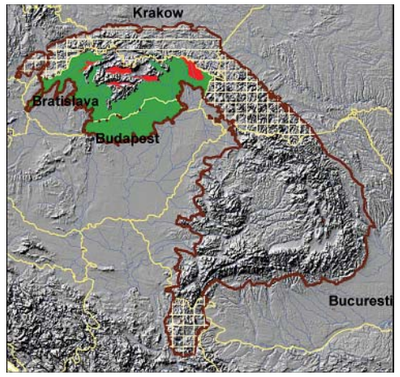
Required measures for protection and restitution
Semi-natural stands of all geographic variants with endangered species should be protected.

G1.7A11 – White cinquefoil oak woods

Red List Status: VU
Criterion: B1≥50%

East Central European oak and pine-oak forests (*Quercus petraea*, *Quercus robur*, *Pinus sylvestris*), mostly with *Potentilla alba*, *Molinia arundinacea*, *Frangula alnus*.

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, SK): 91400 ha
Primeval virgin forest: 0 ha



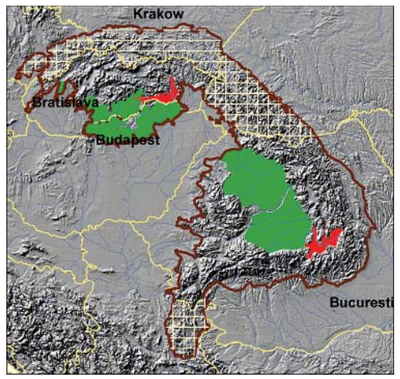
Assessment rationale and causes of endangerment
Most forests have been transformed into arable land. Semi-natural stands are relatively rare, degraded by low forestry, and commercial forestry, and have often been converted into coniferous tree plantations.
Main threats are transformation on a forest monocultures and spread of non-native tree species, invasive alien species, change in native species dynamics.

Required measures for protection and restitution
Protection of the still remaining semi-natural forests and regeneration of semi-natural forests by natural succession and promotion of indigenous tree species, particularly oaks.

G1.7A12 – Tartar maple steppe oak woods

Red List Status: CR
Criterion: B1≥90%, D≤ 5000 ha, A2≥50%

Xero-thermophile oak woods constituting the climax woodland element of the Pannonian and Ponto-Sarmatic wooded steppe biome, with a flora richer in southern, Euxinian and Sarmatic elements than that of the cinquefoil oak woods.



Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, RO, SK): 2525 ha
Primeval virgin forest: 0 ha

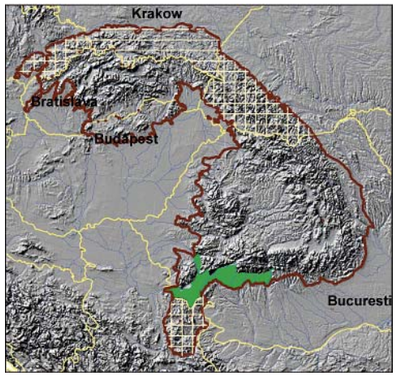
Assessment rationale and causes of endangerment
Most forests have been transformed into arable land. Semi-natural stands are very rare.
Causes of endangerment are agricultural use, transformation on a forest monocultures and spread of non-native tree species, invasive alien species, change in native species dynamics.

Required measures for protection and restitution
Protection is necessary. Regeneration of semi-natural forests by natural succession and promotion of indigenous tree species, particularly oaks.

G1.7C2 – [Carpinus orientalis] woods

Red List Status: EN
Criterion: D≤2500 ha

Carpinus orientalis-dominated facies of thermophilous woods of the Balkan Peninsula, south to Greece. The main distribution area in the Carpathians of this habitat is SW of Romania, as the most northern irradiations and extensions of the habitat.



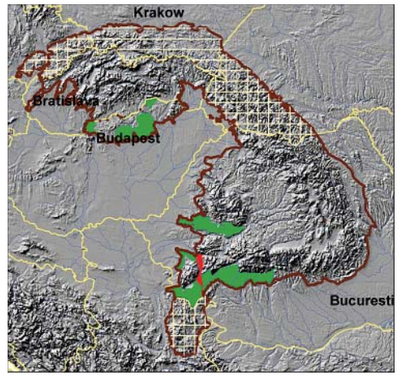
Geographical distribution in the Carpathians
Endemic habitat: no
Current area (RO): 1500 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
Few semi-natural stands remain preserved.
Main threats are related to its distribution in very small areas, grazing, burning down, soil erosion and landslide.

Required measures for protection and restitution
The main part of the current distribution of the habitat is included in protected areas and Natura 2000 sites.

G1.7C4 – Thermophilous [Tilia] woods

Red List Status: VU
Criterion: B1≥50%



a) *Tilia tomentosa*-dominated facies of mixed deciduous forests of southern Central Europe and the northern and middle part of the Balkan Peninsula, mostly within the *Quercion frainetto* environment, but also locally developed in conjunction with eastern *Carpinion betuli* forests.
b) Loosely closed forests mainly of *Tilia platyphyllos* and *Fraxinus excelsior* developed on shallow soils of exposed crests of limestone mountains (more rarely on andesite rocks) of the Northern Hungarian Range, with an herb layer of *Brachypodium pinnatum*, *Galium erectum*, *Cruciata glabra*, *Digitalis grandiflora*, *Erysimum odoratum*, *Sisymbrium strictissimum*, *Aconitum anthora*, accompanied by endemics among which *Hesperis vrabelyiana*, *Carduus collinus* and by other regionally rare species with disjunct distribution, such as *Waldsteinia geoides*, *Melica altissima*, *Carex brevicollis*. They constitute relict forests, most probably of the Boreal era, and are of great biological value.

Taxonomic note
Habitat includes the following sub-units:
G1.7C41: Silver lime woods
G1.7C42: Oro-Pannonic steppe ash-lime woods

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, RO): 8200 ha
Primeval virgin forest: 0 ha

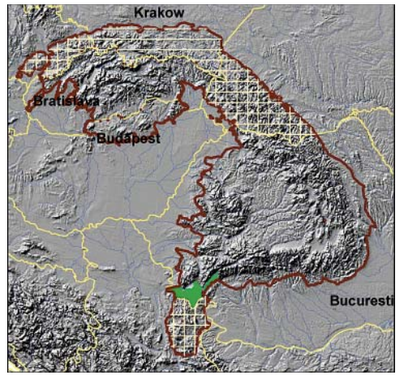
Assessment rationale and causes of endangerment

Required measures for protection and restitution

G1.7C5 – [Celtis australis] woods

Red List Status: CR
Criterion: D≤250 ha, B1 ≥ 50

Thermophilous woods dominated by, or rich in, *Celtis australis*. Forests dominated by *Celtis australis* may have been an important component of Mediterranean woodland, in particular in North Africa, but appear to have been destroyed almost everywhere and to be represented only by individual trees and small stands.



Geographical distribution in the Carpathians
Endemic habitat: no
Current area (RO): 10 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
Current distribution covers less than 10 ha (0.1 km²) and consists of few small locations in Cernei Mountains and Banatului Mountains.
Causes of endangerment are scattered and fragmented distribution and very small populations.

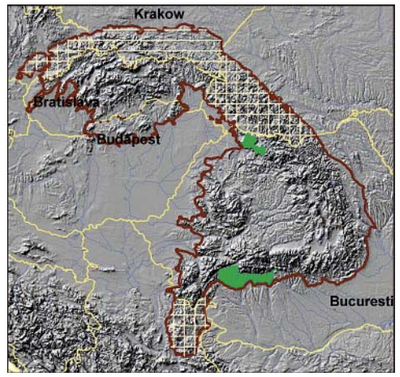
Required measures for protection and restitution
Protection is necessary.

G1.7D – [Castanea sativa] woodland

Red List Status: EN
Criterion: B1 ≥ 70, A4b1, A4b2

Supra-Mediterranean and sub-Mediterranean *Castanea sativa*-dominated forests and old established plantations with semi-natural undergrowth.

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (RO): 6500 ha
Primeval virgin forest: 0 ha

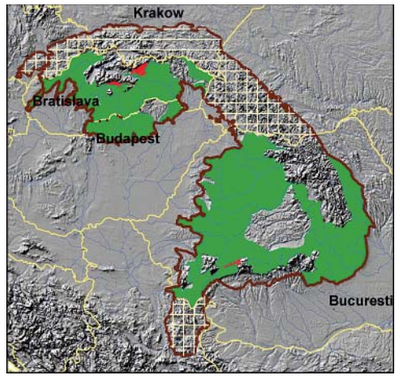


Assessment rationale and causes of endangerment
In the last two decades the populations of sweet chestnut trees were strongly affected by chestnut blight (*Cryphonectria parasitica*). There are ongoing projects for biological control of the disease which damages chestnut trees. This habitat distribution consists of 2 major locations: In Baia Mare-Baia Sprie and in Northern part of Gorj County. The current distribution of the habitat covers about 65 km² in the Romanian Carpathians.
Causes of endangerment are change in native species dynamics (directly impacting habitat) and pathogens / parasites. In the last two decades the populations of sweet chestnut trees were strongly affected by chestnut blight (*Cryphonectria parasitica*).

Required measures for protection and restitution
Both major distribution centres of this habitat are included in Natura 2000 sites (Arboretele de castan comestibil de la Baia Mare and Nordul Gorjului de Vest).

G1.871 – Woodrush oak forests

Red List Status: VU
Criterion: B1≥50%



Mesophile, meso-xerophile or meso-hygrophile, mesothermal acidophilous forests of *Quercus petraea* or sometimes *Quercus robur*, of central European or northwestern medio-European affinities, usually with *Luzula luzuloides*, distributed in the Western and Central European Hercynian ranges and their periphery, the northern and northeastern Alpine periphery and the northern and western Carpathian periphery.

Taxonomic note
Habitat includes the following sub-units:
- G1.8712: Central European dyer's greenweed oak forests
- G1.8713: Pre-Carpathian beech-sessile oak forests
- G1.8714: Central European hygrophile acidophilous oak forests

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, RO, SK): 74500 ha
Primeval virgin forest: 2500 ha

Assessment rationale and causes of endangerment
Causes of endangerment are clearing, transformation into agriculturally useful areas, and poor regeneration of the sessile oak and coniferous plantations. In the past important surfaces of this habitat were replaced with Scots pine or black locust plantations.

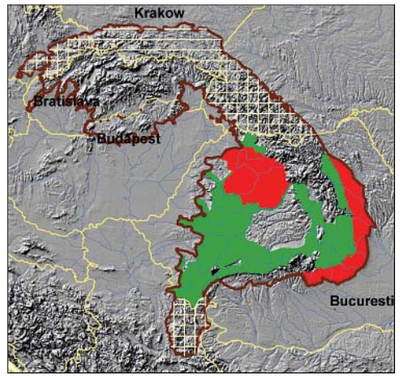
Required measures for protection and restitution
Protection of semi-natural stands, protection should be given priority over utilisation.

G1.8A – Continental [Quercus petraea] forests

Red List Status: VU
Criterion: B1≥50%

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (RO): 48000 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
Main threats are poor regeneration of the sessile oak. In the past important surfaces of this habitat were replaced with Scots pine or black locust plantations.

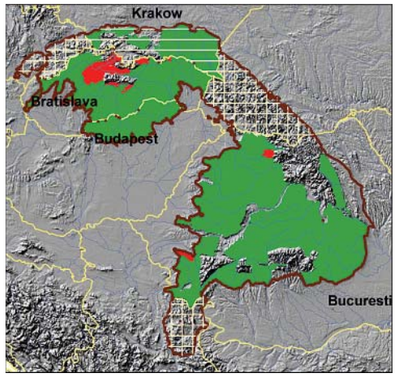


Required measures for protection and restitution
1.1.1. – Development
1.1.2. – Implementation
3.8. – Conservation measures
4.1. – Maintenance/Conservation
4.2. – Restoration
4.4.3. – Management
5.4. – Recovery management
5.5. – Disease, pathogen, parasite management

G1.A16 – Sub-continental [Quercus] – [Carpinus betulus] forests

Red List Status: VU
Criterion: B1≥50%, A4c1

Quercus robur or *Quercus petraea* forests of eutrophic or mesotrophic soils of subcontinental and continental northern and Central Europe and of Eastern Europe. *Carpinus betulus* is generally present in their western representatives, widespread in Central Europe and western Eastern Europe. They are richer in lime, *Tilia cordata*, than the sub-Atlantic forests of units G1.A13, G1.A14 and 41.25. They are of more northern character in their area of mutual approach than the Balkanic forests of unit G1.A1C. Their southern limit of occurrence follows the Carpathian arc, the northern rim of the Podolian plateaux, and, farther east, the southern limit of nemoral forests.



Taxonomic note
Habitat includes the following sub-units:
- G1.A164: Peri-Carpathian lime-oak-hornbeam forests
- G1.A166: Carpathian hairy sedge oak-hornbeam forests
- G1.A167: Sub-Pannonic primrose oak-hornbeam forests
- G1.A168: Central sub-Carpathian oak-hornbeam forests

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU, PL, RO, SK): 268200 ha
Primeval virgin forest: 42 ha - SK

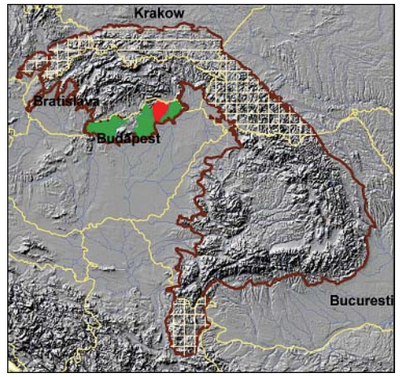
Assessment rationale and causes of endangerment
Causes of endangerment are cultivation of non-indigenous tree species, change in native species dynamics (directly impacting habitat), Poor recruitment/reproduction/regeneration, invasive alien species, formerly clearing for agricultural use.

Required measures for protection and restitution
Preservation and restoration of semi-natural stands. Naturally oriented forest management.

G1.A1B1 – Pannonic hygrophile ash-oak-hornbeam forests

Red List Status: CR
Criterion: B1≥90%, B2≥90%

Quercus robur, *Quercus petraea*, *Carpinus betulus*, *Fraxinus angustifolia*, *Ulmus minor* forests of deep nutrient-rich gley soils of the Pannonic plains and hills of Styria, the Burgenland, the Alföld, the northern Hungarian Sator Range, the western Slovakian Danube plain and the eastern Slovakian lowlands, often developed in contact with riverine forests of the Alno-Padion, occupying slightly higher ground, Pannonic vicariant of the Illyrian forests of unit G1.A1A2. *Carex brizoides*, *Anemone nemorosa*, *Corydalis solida*, *Galanthus nivalis* are abundant in the herb layer, which is particularly rich in vernal ephemerals, including *Gagea spathacea*, *Gagea lutea*, *Gladiolus imbricatus*, *Cyclamen purpurascens*, *Crocus neapolitanus*, *Erythronium dens-canis*, *Helleborus dumetorum*, *Adoxa moschatellina*, *Anemone ranunculoides*, *Ranunculus ficaria*, *Scilla vindobonensis*, *Leucojum vernum*.



Geographical distribution in the Carpathians
Endemic habitat: no
Current area (HU): 220 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
In Hungary and further south the forests have been greatly hampered by man. Remnants of semi-natural forests are scattered to almost completely absent and are at great peril because of the general lowering of the groundwater table. Sometimes only scrub remnants remain preserved at the edges of the flumes.
Causes of endangerment are transformation into agriculturally useful areas (clearing, habitat drainage, water regulation, melioration), cultivation of non-indigenous tree species, change in native species dynamics (directly impacting habitat), poor recruitment/ reproduction/ regeneration, invasive alien species.

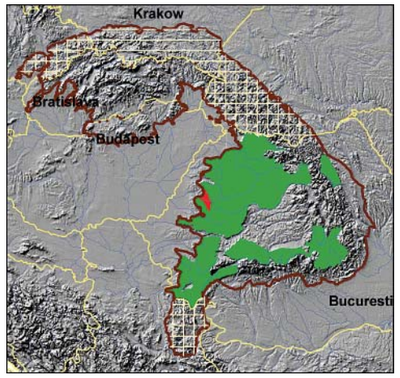
Required measures for protection and restitution
Protection of representative semi-natural stands.

G1.A1C – Southeastern European [Quercus] – [Carpinus betulus] forests

Red List Status: VU
Criterion: B1≥50%

Forests of *Carpinus betulus* and *Quercus robur*, *Quercus petraea* or *Quercus dalechampii*, sometimes with *Quercus cerris* or *Quercus frainetto*, of the flanks and piedmont of the eastern and southern Carpathians and of the plateaux of the western Ukraine; azonal, often isolated oak-hornbeam woods of the Moesian Quercion frainetto zone, of the eastern Pannonic and western Pontic steppe woods zone and of the pre-Pontic hills of south-eastern Europe. They are characterized by an admixture of sub-Mediterranean *Quercion frainetto* species, and, in the east, of Euxinian species.

Taxonomic note
Habitat includes the following sub-units:
- G1.A1C1: Dacian oak-hornbeam forests
- G1.A1C2: Moldo-Muntenian oak-lime-hornbeam forests
- G1.A1C3: Moesian oak-hornbeam forests
- G1.A1C4: Southern Sarmatic oak-lime-hornbeam forests



Geographical distribution in the Carpathians
Endemic habitat: no
Current area (RO): 95000 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
Main threat for the habitat is related to poor fruits production and regeneration of oak, change in native species dynamics (directly impacting habitat), small scale, selecting logging, drought.

Required measures for protection and restitution
Protection of representative semi-natural stands. Naturally oriented forest management.

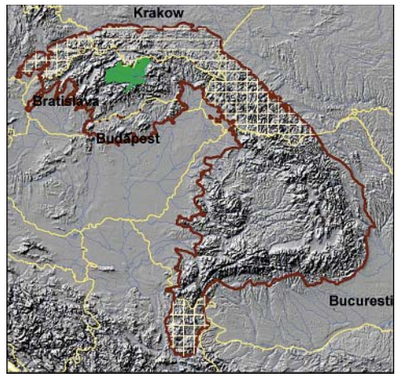
G3.12 – Calciphilous [Abies alba] forests

Red List Status: CR
Criterion: B1 ≥ 70, D≤ 2500 ha, A4a

Abies alba and *Abies alba-Picea abies* forests developed on calcareous soils.

Geographical distribution in the Carpathians

Endemic habitat: no
Current area (SK, UA): 1650 ha
Primeval virgin forest: 0 ha



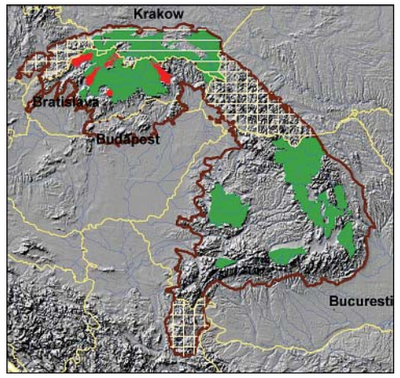
Assessment rationale and causes of endangerment
Semi-natural stands are rare and usually preserved only in small areas. Causes of endangerment are fir decline, presumably due to increasing air pollution from industrial emissions. Transformation of fir forests into spruce plantations. Poor recruitment/ reproduction/ regeneration increasing - gnawing by forest animals, clear-cutting.

Required measures for protection and restitution
Preservation and restoration of semi-natural stands. Naturally oriented forest management.

G3.13 – Acidophilous [Abies alba] forests

Red List Status: VU
Criterion: B1≥50%, B2≥50%, A4c1

Abies alba and *Abies alba-Picea abies* forests developed on acid soils of the Alps, the Dinarides, the Carpathians, the Pyrenees, the Jura, the Hercynian ranges and the northern Apennines, within the biogeographical range of beech forests of the *Fagion medio-europaeum*, of the *Fagion illyricum* or of the *Fagion dacicum*.



Taxonomic note
Habitat includes the following sub-units:
- G3.132: Acidophile Hercynio-Alpine fir forests
  - G3.1321: Peri-Alpine acidophile fir forests
  - G3.1323: Dacian acidophile beech fir forests
- G3.134: Holy Cross fir forests
- G3.135: [Bazzania] fir forests

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (PL, RO, SK): 83200 ha
Primeval virgin forest: 1085 ha

Assessment rationale and causes of endangerment
Most stands have been transformed for almost pure spruce or spruce-larch-plantations.
Causes of endangerment are fir decline, presumably due to increasing air pollution from industrial emissions. Transformation of fir forests into spruce plantations. Poor recruitment/ reproduction/ regeneration increasing - gnawing by forest animals, clear-cutting.

Required measures for protection and restitution
Protection of the remaining semi-natural stands.

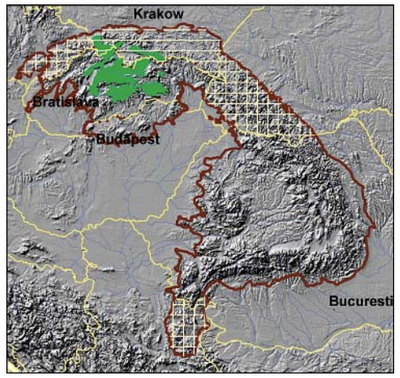
G3.1B61 – Western Carpathian subalpine spruce forests

Red List Status: VU
Criterion: B2≥50%, A4c2

Subalpine *Picea abies* forests of the northwestern and northern Carpathians of Poland and Slovakia, partly with *Abies alba*, with *Luzula luzulina*, *Soldanella carpatica*, often in combination with tall-herb-spruce forests.

Geographical distribution in the Carpathians
Endemic habitat: yes
Current area (PL, SK): 37000 ha
Primeval virgin forest: 1200 ha

Assessment rationale and causes of endangerment
Poland: the altitude-zonal climax-community was preserved quite well in many places until recently, but is now greatly endangered. A characteristic and protection worthy community in its entire area of distribution; Slovakia: potentially endangered by pollutant emissions. Importance for nature conservation: Carpathian spruce forest type, biotope of more important species, a water and soil protective function
Causes of endangerment are increasing pollution due to industrial emissions, clear-cutting, building of recreational facilities, fires, occupying an area of natural forest stands, atmospheric pollution, windstorm, climate changes, pathogens / parasites / pests (*Ips typographus*), use of insecticides.

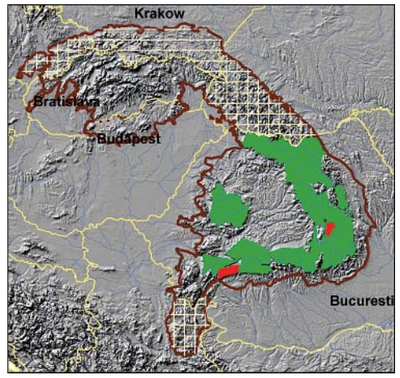


Required measures for protection and restitution
Protection of the remaining natural stands.

G3.1B62 – Eastern Carpathian subalpine spruce forests

Red List Status: VU
Criterion: B2≥50%

Subalpine *Picea abies* forests of the northern Eastern, the eastern and the southern Carpathians of the Ukraine and Romania.



Geographical distribution in the Carpathians
Endemic habitat: yes
Current area (RO): 525000 ha
Primeval virgin forest: 41000 ha

Assessment rationale and causes of endangerment
Mainly intensely used; only a few semi-natural forests have been preserved; very important for maintaining the water balance and soil protection in the mountains. Causes of endangerment are increasing pollution due to industrial emissions, clear-cutting, building of recreational facilities, fires, occupying an area of natural forest stands, atmospheric pollution, windstorm, climate changes, pathogens/ parasites / pests (*Ips typographus*), use of insecticides, cattle grazing and uprooting for grazing.

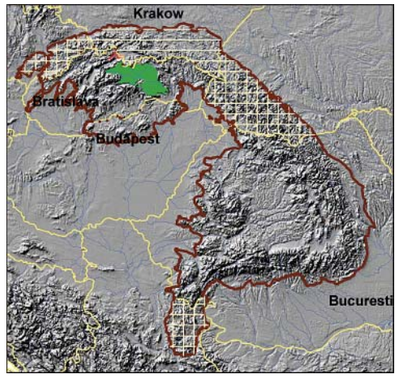
Required measures for protection and restitution
Protection of the semi-natural remnants.

G3.1C6 – Inner Carpathian spruce forests

Red List Status: VU
Criterion: B1≥50%, A4c2, $D_{endemic}$ ≤ 5000 ha

Picea abies forests of the montane and collinar levels of the inner basin of the Slovakian Carpathians, formed along the Poprad River valley between the High Tatras and the Low Tatras and subjected to a climate of high continentality.

Geographical distribution in the Carpathians
Endemic habitat: yes
Current area (SK): 2900 ha
Primeval virgin forest: 0 ha



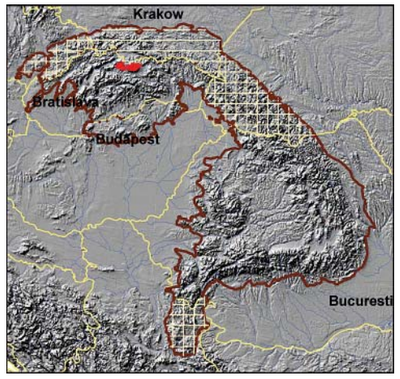
Assessment rationale and causes of endangerment
The main threats are wind damage and bark beetle plagues, use of insecticides, increasing stress from air pollution related to industry and traffic, soil acidification, clear-cutting, tourism - building of recreational facilities.

Required measures for protection and restitution
Semi-natural stands are worthy of protection (genetic origin of the local populations and ecotypes).

G3.251 – Western Carpathian larch and arolla forests

Red List Status: EN
Criterion: $D_{endemic} \leq 5000$ ha, B1≥70%

Timberline silicicolous *Larix decidua* and *Pinus cembra* formations of the Tatras.



Geographical distribution in the Carpathians
Endemic habitat: yes
Current area (SK): 870 ha
Primeval virgin forest: ? ha

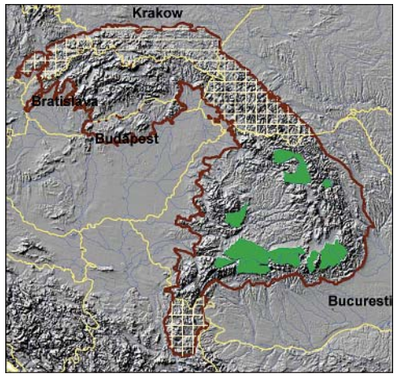
Assessment rationale and causes of endangerment
The habitat has very limited distribution (limited just to Tatra National Park). However there are no present threats (due to high protection regime), it is endemic habitat for the Carpathians. There are no exact data but distribution of arolla in the last centuries was bigger and decreased due to use of arolla timber. Despite of its small area it is very important vegetation type for biodiversity of upper tree-line in the Tatra Mountains. The main threats are increasing environmental pollution, particularly from the air.

Required measures for protection and restitution
All patches are strictly protected within the Tatra National Park.

G3.253 – Eastern Carpathian larch and arolla forests

Red List Status: EN
Criterion: B1≥70%, $D_{endemic} \leq 5000$ ha

Local mixed forests of *Pinus cembra*, *Picea abies* and *Pinus mugo*, of the lower subalpine level (1650 – 1500 m), with regional species *Rhododendron myrtifolium*, *Bruckenthalia spiculifolia*, *Melampyrum saxosum*, *Soldanella hungarica* ssp. *major*, *Campanula abietina*.



Taxonomic note
Habitat includes the following sub-units:
G3.2531: Eastern Carpathian larch forests
G3.2532: Eastern Carpathian arolla forests

Geographical distribution in the Carpathians
Endemic habitat: yes
Current area (RO): 3900 ha
Primeval virgin forest: 1500 ha

Assessment rationale and causes of endangerment
The main threats are tree-cutting, tourism facilities for winter sport practices, road construction.

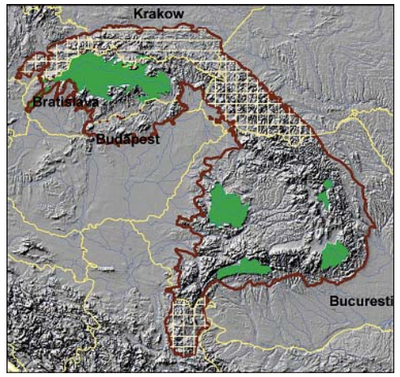
Required measures for protection and restitution
Being a natural habitat placed at the upper limit of forests, no management measures are needed. Due to this fact, this habitat is rarely ever protected. They have an important role against soil erosion.

G3.442 – Carpathian relict calcicolous [Pinus sylvestris] forests

Red List Status: VU
Criterion: $D_{endemic} \leq 5000$ ha

Isolated, calcicolous *Pinus sylvestris* forests of the western Carpathians, related to the spring heath Scots pine forests of the Alpine area, limited to a few small enclaves in the Strazov mountains, the Velka Fatra, the Pieniny (*Pinus sylvestris-Calamagrostis varia* community, *Pinus sylvestris-Carex alba* community), the Slovakian inner-Carpathian basins and the Slovakian Erzgebirge. *Erica herbacea* and *Polygala chamaebuxus* are absent; the undergrowth includes a number of species of continental distribution and xerothermic affinities, some, western Carpathian endemics; characteristic are *Linum flavum*, *Carex humilis*, *Carex alba*, *Calamagrostis varia*, *Pulsatilla slavica*, *Thymus carpathicus*, *Primula auricula* ssp. *hungarica*, *Globularia aphyllanthes*, *Campanula carpatica*, *Festuca tatrae*.

Taxonomic note
Habitats of the Romanian Carpathians should be classified as:



G3.4C8: East Carpathian [Sesleria] Scots pine forests
G3.4CA: East Carpathian [Daphne blagayana] Scots pine forests

Geographical distribution in the Carpathians
Endemic habitat: yes
Current area (PL, RO, SK): 4150 ha
Primeval virgin forest: 350 ha

Assessment rationale and causes of endangerment
The habitat has limited distribution. It is endemic habitat for the Carpathians. Despite of its small area it is very important vegetation type for biodiversity of calcicolous montane forests. Habitat is not used. Due to its lack of exploitability it is semi-natural to natural in nature almost everywhere. The main threats are forests fires and the forests stands should be injured by soil erosion, collection of rare species.

Required measures for protection and restitution
This being a natural habitat growing on rocky ground, no management measures are needed. Prohibiting the collection of *Arctostaphyllos uva-ursi*, medicinal plant (*Scărița-Belioara*). Restrictions for collecting *Daphne blagayana*, ornamental plant (Cozia).

G3.562 – Banat pine forests

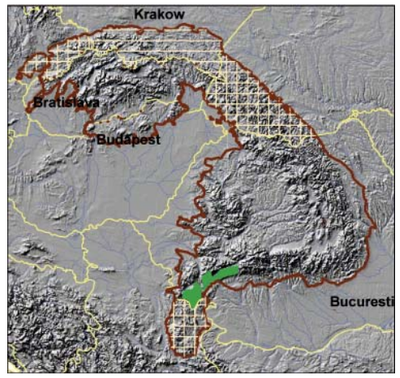
Red List Status: EN
Criterion: A4a, $D_{endemic} \leq 5000$ ha

Relict thermophile forests of *Pinus banatica* (*Pinus nigra* var. *banatica*) developed on calcareous substrates of the montane level of the Southern Carpathians, in particular, of the Banat, with *Genista radiata*, *Fraxinus ornus*, *Cotinus coggygria*, *Biscutella laevigata*, *Ceterach officinarum*, *Festuca xanthina*, *Seseli rigidum*, *Campanula kladniana*, *Centaurea rhenana* and *Campanula divergens*.

Geographical distribution in the Carpathians
Endemic habitat: yes
Current area (RO): 3200 ha
Primeval virgin forest: 500 ha

Assessment rationale and causes of endangerment
The main threats to *Pinus nigra* forests include unsustainable cutting for production purposes (particularly timber), the spread of exotic species, defoliation by insect pests (especially *Thaumetopoea pityocampa*), over grazing, fires and genetic pollution.

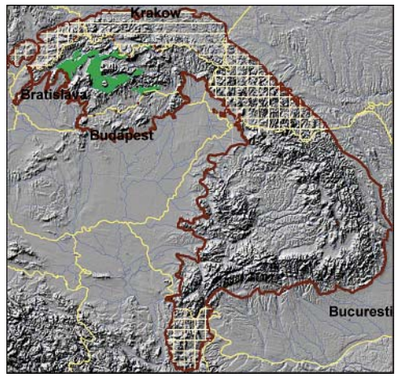
Required measures for protection and restitution
Entire area covered by habitat is included in protected areas.



G3.977 – Alpino-Carpathian yew woods

Red List Status: CR
Criterion: A1≥ 80, B1≥90, D ≤ 250 ha

Taxus baccata woods of the Alpine system and of the Carpathians, in part rare facies of the yew-beech formations, in part amphibolite-colonizing woods with *Picea abies* and *Fraxinus excelsior* and *Juniperus sabina*.



Taxonomic note
Forest communites with a rare occurence of yew include into the G1.6612 Medio-European yew steep slope beech forests.

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (SK): 250 ha (from other countries data are missing)
Primeval virgin forest: 50 ha

Assessment rationale and causes of endangerment
The most important factor effecting viability of yew-tree populations is damaging fully-grown and especially young yew-trees by deer game. Particularly adverse situation occurs when young trees are being grazed by animals. Another important factor is decline of quality of tree-top, decline of blossom and fertility of yew-trees in result of increased density of forest vegetation. The vegetation suffers from light shock when circled out and dies back gradually. As a consequence of stagnation of natural regeneration of yew-tree, heavy fragmentation of the occurrence, small number of trees in one location, improper application of forest-economic practices, many populations of yew-tree are endangered by extinction.

Required measures for protection and restitution
The close to nature and sustainable management in the forest, the natural tree species conservation, the support of forest regeneration and the follow protection of seedlings against the game.

G3.E – Nemoral bog conifer woodland

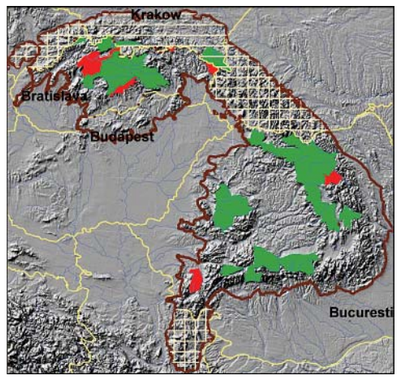
Red List Status: CR
Criterion: B1≥90%, B2≥90%, A4a

Woods of *Pinus* spp. or *Picea* spp., sometimes mixed with *Betula pubescens*, colonizing bogs and fens in the nemoral zone. Conifer-dominated bog woodland occurs mainly in the boreal and boreonemoral zones, but extends into the nemoral, wooded steppe and steppe zones.

Taxonomic note
Habitat includes the following sub-units:
- G3.E1: [Pinus mugo] bog woods
- G3.E2: Nemoral [Pinus sylvestris] mire woods
- G3.E211: Inland northern bilberry Scots Pine mire woods
- G3.E5: Nemoral peatmoss [Picea] woods
- G3.E51: Peri-Alpine peatmoss spruce woods
- G3.E6: Nemoral bog [Picea] woods

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (PL, RO, SK): 11350 ha
Primeval virgin forest: 1050 ha

The current distribution of this habitat covers around 74 km² in Romanian Carpathians. In this habitat type has been included also the habitat type Norway spruce forests with Sphangnum spp. (R4210) because sometimes the transition between 91D0* and 9410 is not evident and environmental conditions and vegetation structure is close to 91D0*. Otherwise, the surface area of 91D0* is around 30 – 35 km².



Assessment rationale and causes of endangerment
Habitat in the past was frequently drained, converted into forestry or used for the excavation of peat. Currently most of the habitat distribution is included in the protected areas and Natura 2000 sites. The main threats are drainage, afforestation, peat extraction, eutrophication, droughts and less precipitation, grazing.

Required measures for protection and restitution
Most of the habitat distribution is included in protected areas and Natura 2000 sites. Cessation of peat extraction, protection of intact mires and remnants, wetland restoration.

G4.71 – Subcontinental nemoral [Pinus] – [Quercus] forests

Red List Status: CR
Criterion: B1 ≥ 50, D ≤ 250 ha

Acidophilous forests in which *Quercus petraea* is associated in the main canopy with *Pinus sylvestris*, characteristic of siliceous bedrock, gravels, loams, moraines, with shallow, often podsolised soils, on relatively dry, often south-facing slopes and hilltops of the collinar and submontane levels of the Bohemian quadrangle, the Carpathians, the eastern Alps and their associated plateaux.

Geographical distribution in the Carpathians
Endemic habitat: no
Current area (SK): 50 ha
Primeval virgin forest: 0 ha

Assessment rationale and causes of endangerment
There are only fragments of boreal - continental forests in the West Carpathian area. It is a rare biotope in this area. Causes of endangerment: fires.

Required measures for protection and restitution
They are not endangered at present. The most of them are classified as protected forests. It is necessary to keep the origin status of this biotope in consideration of the rare occurrence.

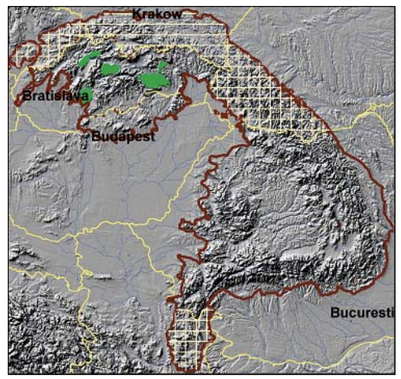


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Table 2: Summary of numbers of forest habitats within each category of threat

IUCN Red List categories	No. of forest habitats	No. of endemic forest habitats
Extinct (EX)	-	-
Extinct in the Wild (EW)	-	-
Critically Endangered (CR)	13	2
Endangered (EN)	10	3
Vulnerable (VU)	17	5
Near Threatened (NT)	4	-
Least Concern (LC)	9	4
Data Deficient (DD)	1	1
Total number of habitats assessed	54	10

Table 3: Endemic habitats and conversion between EUNIS habitat classification and other classifications

EUNIS	Endemic habitat	CM system	Natura	Pal. Hab
G1.1112 - Eastern European poplar-willow forests	no	Salicion albae	91E0*	44.132 - Eastern European poplar-willow forests
G1.1141 - Pannonic willow and poplar-willow galleries	no	Salicion albae	91E0*	44.1161 - Pannonic willow and poplar-willow galleries
G1.1213 - Hercynio-Carpathian grey alder galleries	no	Alnion incanae	91E0*	44.2 Boreo-alpine riparian galleries
G1.1214 - Eastern Carpathian grey alder galleries	yes	Alnion incanae	91E0*	44.2 Boreo-alpine riparian galleries
G1.21 - Riverine Fraxinus - Alnus woodland, wet at high but not at low water	no	Alnion incanae	91E0*	44.3 Middle European stream ash-alder woods
G1.2233 - Pannonic ash-oak-alder forests	no	Alnion incanae	91F0	44.4 Mixed oak-elm-ash forests of great rivers
G1.2234 - Getic oak-elm-ash forests	no	Alnion incanae	91F0	44.434 Getic oak-elm-ash forests
G1.411 - Meso-eutrophic swamp alder woods	no	Alnion glutinosae	-	44.91 Alder swamp woods
G1.42 - [Quercus] swamp woods	no	Genisto germanicae-Quercion	9190	44.94 Oak swamp woods
G1.5 - Broadleaved swamp woodland on acid peat	no	Betulion pubescentis	91D0*	44.A1 Sphagnum birch woods
G1.611 - Medio-European collinar woodrush beech forests	no	Luzulo-Fagion	9110	41.111 Medio-European collinar woodrush beech forests
G1.6121 - Hercyno-Alpine montane woodrush beech forests	no	Luzulo-Fagion	9110	41.1121 Hercyno-Alpine montane woodrush beech forests
G1.65 - Medio-European subalpine [Fagus] woods	no	Fagion - Acerenion	9140	41.15 Medio-European subalpine beech woods
G1.6D3 - East Carpathian subalpine beech forests	yes	Symphyto cordati-Fagion	91V0	41.1D3 East Carpathian sub-alpine beech forests
G1.7373 - Intra-Carpathian insular [Quercus virgiliana] woods	yes	Quercetalia pubescenti-petraeae	91AA*	41.7373 Intra-Carpathian insular [Quercus virgiliana] woods
G1.7374 - Pannonian [Quercus pubescens] woods	no	Quercetalia pubescenti-petraeae	91H0*	41.7374 Pannpnian white oak woods
G1.769 - Getic sub-continental thermophilous oak woods	no	Quercion confertae cerris	91M0	41.769 Getic sub-continental thermophilous oak woods
G1.7A11 - White cinquefoil oak woods	no	Potentillo albae-Quercion	91I0*	41.7A11 Western white cinquefoil sessile oak woods
G1.7A12 - Tartar maple steppe oak woods	no	Aceri tatarici-Quercion	91I0*	41.7A2 Tartar maple steppe oak woods
G1.7C2 - [Carpinus orientalis] woods	no		-	41.822 Helleno-Balkanic oriental hornbeam woods
G1.7C4 - Thermophilous [Tilia] woods	no	Tilio-Acerion	9180	41.84 Thermophilous lime woods
G1.7C5 - [Celtis australis] woods	no	Celto-Juglandetum regiae	-	41.85 Nettle-tree woods
G1.7D - [Castanea sativa] woodland	no	Castaneo-Quercion	9260	41.9 Chestnut woods
G1.871 - Woodrush oak forests	no	Genisto germanicae-Quercion	91I0*	41.571 Woodrush oak forests
G1.8A - Continental [Quercus petraea] forests	no	Galio-Carpinetum	9170	
G1.A16 - Sub-continental [Quercus] - [Carpinus betulus] forests	no	Carpinion betuli	91G0*	41.26 Sub-continental oak-hornbeam forests
G1.A1B1 - Pannonic hygrophile ash-oak-hornbeam forests	no	Quercion robori-Carpinenion	91G0*	41.2B1 Pannonic hygrophile ash-oak-hornbeam forests
G1.A1C - Southeastern European [Quercus] - [Carpinus betulus] forests	no	Dacian oak & hornbeam	91Y0	41.2C4 Southern Sarmatic oak-lime-hornbeam forests
G3.12 - Calciphilous [Abies alba] forests	no	Galio-Abietenion	-	41.12 Calciphile medio-European fir forests
G3.13 - Acidophilous [Abies alba] forests	no	Galio-Abietenion	-	42.13 Acidophile medio-European fir forests
G3.1B61 - Western Carpathian subalpine spruce forests	yes	Vaccinio-Piceion	9410	42.2161 Western Carpathian subalpine spruce forests
G3.1B62 - Eastern Carpathian subalpine spruce forests	yes	Vaccinio-Piceion	9410	42.2162 Eastern Carpathian subalpine spruce forests
G3.1C6 - Inner Carpathian spruce forests	yes	Vaccinio-Piceion	9410	42.2161 Western Carpathian subalpine spruce forests
G3.251 - Western Carpathian larch and arolla forests	yes	Vaccinio-Piceion	9420	42.351 Western Carpathian larch and arolla forests
G3.253 - Eastern Carpathian larch and arolla forests	yes	Vaccinio-Piceion	9420	42.353 Eastern Carpathian larch and arolla forests
G3.442 - Carpathian relict calcicolous [Pinus sylvestris] forests	yes	Pulsatillo slavicae-Pinion	91Q0	42.542 Carpathian relict calcicolous pine forests
G3.562 - Banat pine forests	yes		9530*	42.662 Banat pine forests
G3.977 - Alpino-Carpathian yew woods	no	Cephalanthero-Fagion	9150	42.A77 Alpino-Carpathian yew woods
G3.E - Nemoral bog conifer woodland	no	Sphagnion medii, Piceion excelsae	91D0*	44.A Birch and conifer mire woods
G4.71 - Subcontinental nemoral [Pinus] - [Quercus] forests	no	Pino-Quercion	-	43.5 Subcontinental nemoral pine-oak forests

RED LIST OF VASCULAR PLANTS OF THE CARPATHIANS

Compiled by Peter Turis

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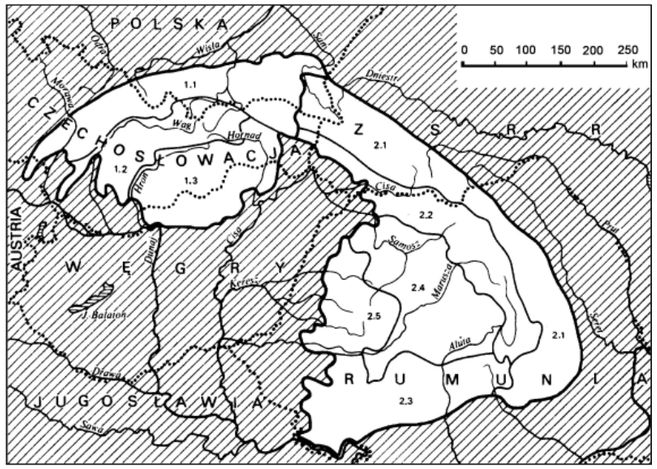
Introduction

The Carpathians constitute one of the largest and best preserved European mountains. Opinions on precise demarcation of about 1,500 km long mountain system vary according to different authors. Part of the authors (e.g. Kondracki 1989) sees them as a massif starting in Austria and continuing through the Czech Republic, Slovakia, Poland, Hungary, Ukraine, Romania up to the Danube River on the border with Serbia. They incorporate there also the relatively large Transylvanian tableland in Romania (Fig. 1). Other authors (e.g. Posea 2006) do not consider the Transylvanian tableland as part of the Carpathian Mountains and they include here only significant mountains rising from the surrounding areas situated below in Romania (Fig. 2). Another authors (e.g. Král 1999) assigned to the Carpathians also the area behind the Kazan breakthrough of the Danube in eastern Serbia (Fig. 3). Exceptionally, hills in the northwest ness of Bulgaria are regarded as part of the Carpathian Mountains as well (e.g. Cankov 1974).

Figure 1: Map of the Carpathians (according to Kondracki 1989).



Depending on the border demarcation, the Carpathian Mts occupy about 210,000 km^2, and the width ranges up to 60 – 300 km (Kondracki 1989, Král 1999). The major part is located in Romania (about 55% of the total area), much less in Slovakia (about 17%), Ukraine (about 10%), Poland (about 9%), Hungary (about 4%), the Czech Republic (about 3%) and Austria (less than 1%) (Kondracki 1989). From the orographic and phytogeographical point of view, the Carpathians are usually divided into Western Carpathians, Eastern Carpathians and Southern Carpathians, the boundaries between these units vary according to respective views (e.g. Kliment 1999).

The Carpathians are the northernmost and easternmost mountain massif of the Central Europe extending up to about 70 m above sea level on the banks of the Danube in the Iron Gates to 2,655 m asl in highest mountains in the Tatras. It represents a corridor linking the Alps with the Balkan Mts. They are typical band-pass mountains with a significant presence of flysch in the outer zone, metamorphosed, crystalline, or extremely rugged calcareous rocks in the central zone and the Neogene volcanics in the inner zone (Kondracki 1989, Král 1999). Several stages of the Quarternary glaciations (Kondracki 1989) left significant geomorphological traces in the highest part of the massif. Anthropogenic use of the Carpathian area has not reached significant level compared with the mountains of the Western Europe and it had more or less extensive character to the mid-20th century. Medieval Wallachian colonization was an important phenomenon in the colonization of Carpathian mountain landscape aimed at obtaining meadows and pastures for livestock.

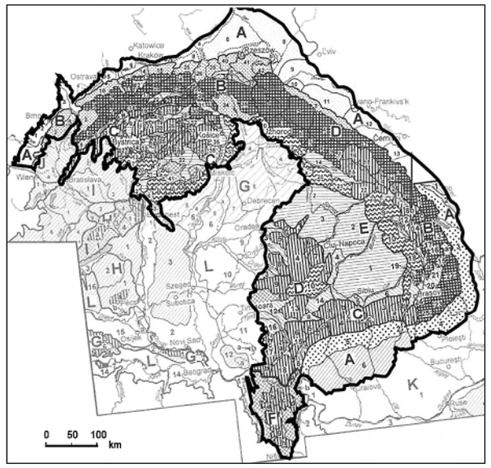
The flora of the Carpathians is considered very rich due to the natural and climatic conditions, geographical

Figure 2: Map of the Carpathians (according to Ruffini F. V., Streifeneder T. & Eiselt B., 2006: Implementing an international mountain convention. An approach for the delimitation of the Carpathian Convention area. European Accademy, Bolzano/Bozen, 119 pp.).

location and historical development. Within about 12,500 taxa of vascular plants recorded throughout Europe (WWF & IUCN 1994), 3,895 taxa are known from the Carpathians (Tasenkevich 1998), among which 482 taxa are exclusively Carpathian endemics (Tasenkevich 2003). Therefore, the Carpathians are included among the key Palearctic mountain eco-regions (Webster *et al.* 2001) and they represent one of the 24 phyto-diversity centres of Europe (WWF & IUCN 1994).

Changes associated with industrialization and agricultural use of Carpathian countries around the mid-20th century lead to gradual anthropisation of the territory, which hit original flora in varying intensity. The Red Lists of plants or plant Red Books have begun to highlight this escalating threatening of flora of these countries. Within each

Figure 3: Map of the Carpathians (according to Král 1999).



country these Red Lists were generated from 70-ties of the last century (Czech Republic: Čeřovský *et al.* 1979, Holub *et al.* 1979; Hungary: Rakonczay 1990; Poland: Jasiewicz 1981, Zarzycki & Kaźmierczakowa 1993; Romania: Boşcaiu *et al.* 1994, Dihoru & Dihoru 1994, Oltean *et al.* 1994, Dihoru & Negrean 2009; Serbia: Stevanović *et al.* 1996, Stevanović 1999; Slovakia: Maglocký 1983; Ukraine: Sitnik 1980; former Czechoslovakia: Čeřovský *et al.* 1999) and they were later rewritten, or supplemented in view of the continuing devastation of the natural environment (Czech Republic: Procházka *et al.* 1983, Holub 2000, Grulich 2012; Hungary: Király 2007; Poland: Zarzycki 1986, Zarzycki & Szeląg 1992, 2006, Kaźmierczakowa & Zarzycki 2001; Slovakia: Maglocký & Feráková 1993, Feráková *et. al.* 2001; Ukraine: Šeljag-Sosonko 1996, Diduch 2009). In these works, the authors evaluated together taxa present not only in the Carpathians, but also in other parts of the country.

Psephellus trinervius – critically endangered (CR) species marginally extending into Romanian Carpathians, photo: P. Turis

Red Lists of plants or Red Books of plants exclusively for the Carpathian region were published only occasionally (Mirek & Piękoś-Mirkowa 1992, Kricsfalusy *et al.* 1999, Kricsfalusy & Budnikov 2007, Mirek & Piękoś-Mirkowa 2008). Only Tasenkevich tried the Carpathian-wide approach to the assessment of vulnerability of flora when preparing two similar versions of red lists of plants within the project of the Carpathian EcoRegion Initiative and WWF – Danube-Carpathian Programme (Tasenkevich 2002, 2003). Their update was needed because of the diversity of data on which assessment was based and changes in the guidelines of the International Union for Conservation of Nature (IUCN) for application of red list criteria.

The present Red List of vascular plants of the Carpathians was developed within the project 'BioREGIO Carpathians' (http://www.bioregio-carpathians.eu) in 2011 – 2013. The partner organizations of the project (State Nature Conservancy of the Slovak Republic and the National Forest Centre in Slovakia, National Foundation for Environmental Protection Environmental Information Centre UNEP/GRID-Warsaw in Poland, Duna-Ipoly National Park Directorate and the Szent István University in Hungary, Carpathian Biosphere Reserve in Ukraine, Piatra Craiului National Park Administration, Maramures Mountains Nature Park Administration, Iron Gates Nature Park Administration and the Environmental Protection Agency Sibiu in Romania, Public Enterprise Djerdap National Park in Serbia) developed the red lists for the Carpathian parts in respective countries, using the specialists'expertise. The aim of the project was to create red lists of vascular plants, several animal groups, forest habitats, non-forest habitats and the list of invasive alien plants and animals.

Methods

The compilation of the Red List of vascular plants of the Carpathians (the 'Carpathian list') preceded the formation of red lists of vascular plants of the Carpathian parts of respective Carpathian countries (the 'national lists'), which represented the basis for development of the final 'Carpathian list'.

Geographical scope

For solving the above-mentioned objective of the "BioREGIO Carpathians' project a common definition of the Carpathians was established (Fig. 4), outline of which coincides with the boundaries declared by Král (Král 1999). In Romania, the territory under evaluation was later modified – the Transylvanian tableland was excluded.

Papaver tatricum subsp. fatraemagnae – endemic endangered (EN) taxon of Slovakian Western Carpathians, photo: P. Turis

Application of IUCN categories and criteria

Internationally binding Red List Guidelines and Criteria

Figure 4: Map of the Carpathians (according to ‚BioREGIO Carpathians' project, http://www.bioregio-carpathians.eu/tl_files/bioregio/donwnloads_resources/Key%20Outputs%20and%20Publication/Bioregio_WP3_Methodology_RedListVascularPlant_EndangeredSpecies.pdf).

defined by IUCN in versions 3.1 and 4.0 (IUCN 2012a, 2012b) have been respected in the threat assessment of taxa included in 'national lists' and 'Carpathian list'. Categories Extinct (EX), Regionally Extinct (RE), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD), Not Applicable (NA) and their content are used in accordance with these guidelines. Missing taxa, for which there is some low probability of recurrence, were distinguished from the category of extinct (EX, RE). For those taxa, unofficial categories 'Critically Endangered (possibly extinct)' [CR (PE); taxa not confirmed in evaluated area for less than 25 years], and 'probably extinct' [globally EX?, in regional scale RE?; taxa not confirmed in the evaluated area for 25 to 50 years]. So category RE was applied here to taxa not confirmed in the assessed area for over 50 years. The category Least Concern (LC) was used in the 'national lists' for common or abundant taxa in any orographic unit of evaluated country. In the 'Carpathian list', it was used for common or abundant taxa in at least one country. Similarly, category Data Deficient (DD) was applied for taxa with lack of data necessary for the evaluation, or for taxa with unclear taxonomic position.

Principles for elaboration of the Red Lists of vascular plants in particular Carpathian countries

During the processes of 'national lists' elaboration, the experts from particular countries used already published documents (available only for Poland and Ukraine; Mirek & Piękoś-Mirkowa 1992, Kricsfalusy *et al.* 1999, Kricsfalusy & Budnikov 2007, Mirek & Piękoś-Mirkowa 2008), or they used published national red lists of plants (for other countries) from which taxa absent in the Carpathian part of the state were excluded. Based on the current field research or detailed taxonomic studies these initial lists were complemented by adding other taxa, or reduction of included taxa.

All native taxa (excluding interspecific hybrids) present in the respective region were included to 'national lists', including steady hybridogenous species and archaeophytes. Neophytes were assigned only in case of naturalized rare taxa that do not behave as invasive at regional level and if they occur in up to 5 locations.

Daphne arbuscula – endemic vulnerable (VU) species of Slovakian Western Carpathians, photo: P. Turis

Inclusion of taxa of apomictic genera in those 'national lists' was very diverse and it expressed levels of obtained data necessary for the assessment of their threat and rareness. For example, genus *Alchemilla* was assessed only in Poland, *Rubus* only in the Czech Republic, *Taraxacum* in the Czech Republic, Poland and partly also in Slovakia, *Hieracium* and *Pilosella* only in the Czech Republic and Slovakia, and *Sorbus* only in Slovakia.

When assessing the conservation status of taxa, sites with demonstrably non-originating occurrence were excluded. Taxa with temporary incidence reported in previous national lists in the EX category were included only if their occurrence was demonstrable (e.g. by herbarium specimens).

Principles for elaboration of the Red List of vascular plants of the Carpathians

Taxonomic structure of the 'Carpathian list' form individual taxa from 'national lists' which were evaluated in IUCN categories VU, EN, CR, CR(PE), RE?, RE and EX? *.

There are included not only categories of threat and criteria for taxa at the Carpathian-wide level, but also at the national level, which shows the regional differences in threat. Presence of not threatened taxa in individual countries (i.e. not included in the ‚national lists') is in the ‚Carpathian list' indicated by '+'. Information about the presence of taxa helps to better understand a category assignment on the Carpathian-wide scale.

Evaluation of the category of threat of individual taxa within the whole Carpathians is mainly based on their distribution. Taxa present in single country has been assigned category of threat proposed by this country. For other taxa, the number of known sites and vulnerability of their habitats has been taken into account in particular.

Special symbols indicate endemic species, neophytes, the occurrence of taxa on predominantly anthropogenic habitats, taxa common in neighbouring regions, but only marginally extending into the Carpathians and taxa protected by international instruments (Bern Convention, Natura 2000). Neophytes are according to the works of Protopopova 1991, Balogh *et al.* 2004, Medvecká *et al.* 2012, Pyšek *et al.* 2012, endemic taxa follow Stoyko & Tasenkevich 1993, Kliment 1999, Bernátová 2002, Kricsfalusy & Budnikov 2002, Bernátová & Májovský 2003, Bernátová *et al.* 2003, Dvořáková 2003, Piękoś-Mirkowa & Mirek 2003, Chrtek & Mráz 2007, Kliment & Bernátová 2008, and Hurdu *et al.* 2012. In the 'Car-

Rhododendron myrtifolium – least concern (LC) species of Eastern and Southern Carpathians, photo: P. Turis

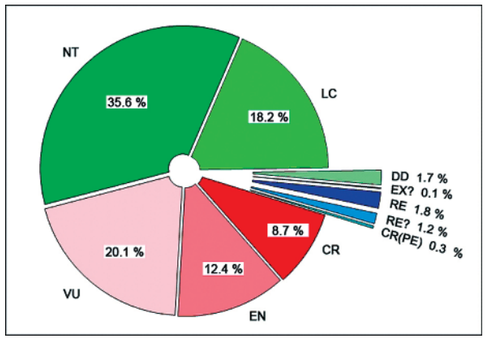
* *see comment about participation of the Czech Republic in the 'BioREGIO Carpathians' project in the chapter 'Note'*

pathian list‘ no endemic species of the Czech Republic (Kaplan 2012) is included.

Nomenclature of included taxa

Individual countries enrolled taxa in ‘national lists‘ according to the nomenclature under their own generally accepted and used resources (Czech Republic: Danihelka *et al.* 2012; Hungary: Király 2009; Poland: Mirek *et al.* 2002, Piękoś-Mirkowa & Mirek 2003, Mirek & Piękoś-Mirkowa 2008, Kaźmierczakowa & Zarzycki in prep.; Romania: Oprea 2005, Ciocârlan 2009; Serbia: Josifović 1970–1977, Sarić & Diklić 1986, Sarić 1992, Stevanović 1999, 2012; Slovakia: Marhold *et al.* in prep.; Ukraine: Mosyakin & Fedoronchuk 1999). Taxa are referred to the level of subspecies. Subspecies are not specified when the species does not have lower taxonomic unit described, or if it is the nominate subspecies.

Figure 5: Percentage of taxa classified in particular categories of threat in the Red List of vascular plants of the Carpathians (abbreviations used: see the text).



Considering the disunity of use of national nomenclature [see e.g. different author abbreviations to *Adenophora liliifolia* (L.) Besser vs. *Adenophora liliifolia* (L.) Ledeb. ex A. DC., etc.], synonyms (see e.g. *Conioselinum tataricum* vs. *Conioselinum vaginatum*, *Seseli peucedanoides* vs. *Gasparinia peucedanoides*, etc.) and the diversity of taxonomic concepts in respective countries (see e.g. *Erigeron alpinus* vs. *E. alpinus* subsp. *intermedius*, *Aquilegia nigricans* vs. *Aquilegia vulgaris* subsp. *nigricans*, etc.) the nomenclature of the ‘Carpathian list‘ refers to the database of Euro+Med PlantBase (Euro+Med PlantBase 2006–2011). In the case of unprocessed groups, the terminology used is in accordance with an earlier version of the database appearing on the PGR Forum (www.pgrforum.org). The taxon name according to this database combines in some cases several differently written names, synonyms and comparable taxa of different taxonomic evaluation in respective states (see examples above). The taxa reported in one country as different (see e.g. *Epipactis purpurata* vs. *E. purpurata* and *E. pseudopurpurata*) are not grouped under the common name in this database. For this reason, some names according to Euro+Med PlantBase are mentioned repeatedly.

The names of taxa according to Euro+Med PlantBase are also referred to the level of subspecies, except of cases, when subspecies are not distinguished in any of the country, and therefore could not have been clearly identified (see e.g. *Aethionema saxatile*, etc.). For the same reason some taxa can be listed simultaneously at species and subspecies level, but both names represent different taxa in ‘national lists‘ (see e.g. *Lathyrus pannonicus* subsp. *pannonicus* and *L. pannonicus* subsp. *collinus*).

Note

For the initial absence of the Czech Republic in the project ‘BioREGIO Carpathians‘ this country has not developed its own ‘national list‘. The involvement of the Czech Republic at a final stage of the ‘Carpathian list‘ elaboration was addressed by adding those threatened taxa that do not occur in other countries. Therefore, taxa evaluated in the ‘Carpathian list‘ disregard the presence and the level of threat / no threat in the Carpathian part of the Czech Republic.

Results and Discussion

The proposed ‘Carpathian list‘ (Table 1) presents a regional list containing 1,091 taxa reported in the database of Euro+Med PlantBase (see column ‘EuroMed name‘) and 1,169 taxa recorded in literature sources of various Carpathian countries (see column ‘National name‘).

It is the first Carpathian-wide list of threatened species according to the IUCN categories and criteria. It includes one taxon evaluated in the category EX?, 20 taxa evaluated in category RE, 13 taxa in the category RE?, 3 taxa in the category CR(PE), 95 taxa in the category CR, 135 taxa in the category EN and 219 taxa in the category VU. Furthermore, there are 388 taxa listed in the category NT, 199 in the category LC and 18 taxa were evaluated as DD. Categories ratio is shown in Fig. 5. The final form of the ‘Carpathian list‘ is based on proposals drawn up by individual Carpathian countries (http://www.sopsr.sk/symfony-bioregio/botany), a part of the ‘national lists‘ is published (Turis *et al.*, 2014). Overview of taxa and representation of IUCN categories in the ‘national lists‘ (status to August 22nd, 2013) is shown in Table 2.

Astragalus dasyanthus – endangered (EN) species of Hungarian Western Carpathians, photo: P. Turis

From the 3,895 taxa mentioned in the Carpathians (Tasenkevich 1998), 1,152 (29.6%) are included in the proposed ‘Carpathian list‘, 103 of them are regarded as Carpathian endemics (21.4 %). In addition, 37 taxa of the ‘Carpathian list‘ are included in Appendix I (strictly protected species) of the Convention on the Conservation of European Wildlife and Natural Habitats (http://conventions.coe.int/Treaty/FR/Treaties/Html/104-1.htm#PTERIDOPHYTA) and 35 taxa are listed in Annex II (Species Requiring designation of Special Areas of Conservation) of the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006L0105:EN:NOT).

Betula humilis – critically endangered (CR) species of Ukrainian and Romanian Eastern Carpathians, photo: P. Turis

Comparison of the list developed is possible with only two similar lists published by Tasenkevich (2002, 2003), however, both contain 747 less taxa. Lower number of evaluated species is partly due to absence of 17 taxa present only in the Serbian part of the Carpathians, which was not the subject of study in mentioned lists published in the past. However, different methodological approach is probably the main reason. Compared with the above lists, the number of taxa included in the relevant categories increased in the present one, the same number remained only in the category Endangered (EN). Notable is also almost three times higher number of (probably) extinct taxa in the current list (37 in total) compared to the previous (14 and 13 in total, respectively, cf. Tasenkevich 2002, 2003). Number of taxa in all threat categories TH (TH = CR + EN + VU) also increased and the present list contains 449 taxa, while Tasenkevich (2002, 2003) reported 324 and 331 taxa, respectively.

With the exception of the (probably) extinct taxa, the results are not comparable due to different methodological approaches used for evaluation. Previous Red Lists (Tasenkevich 2002, 2003) were also based on different input data and therefore the difference in number of evaluated taxa as well as its distribution in IUCN categories can not be considered as fundamentally important. Only the Red List elaborated by using the same methodology will allow for more detailed analysis.

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Table 1: Red List of vascular plants of the Carpathians

EuroMed name	National name	Character	Carpathians category	Carpathians criteria	SK cat	SK crit	SK pres	HU cat	HU crit	HU pres	PL cat	PL crit	PL pres	UA cat	UA crit	UA pres	RO cat	RO crit	RO pres	RS cat	RS crit	RS pres	CZ cat	CZ crit
Acanthus hungaricus (Borbás) Baen.	*Acanthus longifolius* Host non Poiret		VU	B2ab(iv)													VU	B2a; B2b(vi)				+		
Achillea asplenifolia Vent.	*Achillea asplenifolia* Vent.	M	VU	B1ab(i,iii,iv,v)	CR	B2a(ii)b(ii,iii,iv,v)				+									+	VU	A1b,c,e;B1;B2b,c,d			
Achillea impatiens L.	*Achillea impatiens* L.		EN	B1ac(iv)													EN	B1a; B1c(iv)						
Achillea lingulata Waldst. & Kit.	*Ptarmica lingulata* (Waldst. & Kit.) DC.		NT											EN	A2abcd				+					
Achillea ochroleuca Ehrh.	*Achillea ochroleuca* Ehrh.	M	CR	B1ab(iii,iv)	RE														+					
Achillea oxyloba subsp. *schurii* (Sch. Bip.) Heimerl	*Ptarmica tenuifolia* (Schur) Schur	E	NT											CR	B1ab(i,ii,iii,iv,v)				+					
Achillea ptarmica L.	*Achillea ptarmica* L.		NT				+	VU	B2b(ii,iii)				+			+			+					
Achillea setacea Waldst. & Kit.	*Achillea setacea* Waldst. & Kit.	M	NT							+	CR	B2a; C2a(i)				+			+					
Aconitum anthora L.	*Aconitum anthora* L.		LC				+			+									+	RE?		+		
Aconitum anthora L.	*Aconitum jacquinii* Rchb.	E	CR	C2a(i)										CR	C2a(i)									
Aconitum bucovinense Zapal.	*Aconitum bucovinense* Zapal.	E	NT								EN	A1a	+			+			+					
Aconitum lycoctonum L. subsp. *lycoctonum*	*Aconitum lycoctonum* L. emend. Koelle subsp. *lycoctonum*		LC				+				VU	B2a	+						+					
Aconitum lycoctonum subsp. *moldavicum* (Hacq.) Jalas	*Aconitum moldavicum* Hacq.	E	LC				+	VU	B2b(iii)				+			+			+					
Aconitum variegatum subsp. *gracile* (Rchb.) Gáyer	*Aconitum variegatum* L. subsp. *gracile* (Rchb.) Gáy.	E	LC				+	VU	B2b(iii)				+			+			+					
Aconitum variegatum subsp. *valesiacum* (Gáyer) Greuter & Burdet	*Aconitum lasiocarpum* (Rchb.) Gáyer	B, E	VU	D2	VU	D2(ii)							+			+								
Adenophora liliifolia (L.) A. DC.		H	NT																					
	Adenophora liliifolia (L.) Besser										RE					+								
	Adenophora liliifolia (L.) Ledeb. ex A. DC.				VU	D2(i)		CR	A4; B2b(i,ii,iii,iv); C2b							+								
Adonis flammea Jacq.	*Adonis flammea* Jacq.	A	VU	B1ab(i,iii,iv)	CR	B2a(i)b(ii,iii,iv)c(ii,iii,iv)		VU											+					
Adonis volgensis DC.	*Adonis volgensis* Steven		VU	E													VU	E						
Aegilops cylindrica Host	*Aegilops cylindrica* Host	A	NT		CR	B2a(ii)b(iii)		VU	B2b(iii, iv)							+			+			+		
Aethionema saxatile (L.) W. T. Aiton			VU	B1ab(iii)																				
	Aethionema saxatile (L.) W. T. Aiton subsp. *saxatile*				EN	B2a(i)b(iii)																			
	Aethionema saxatile (L.) R. Br.																CR	B1a; B1c(iii)	+			+		
Agropyron cristatum (L.) Gaertn.			DD																					
	Agropyron cristatum (L.) Gaertn.	N						VU	B2b(ii,iii,iv)							+			+			+		
	Agropyron pectinatum (M. Bieb.) P. Beauv. subsp. *pectinatum*	M			CR	B2a(ii)b(iii)														+					
Agrostemma githago L.	*Agrostemma githago* L.	A	LC		CR	A2ac; B2a(i)b(iii,iv,v)				+		+			+				+			+		
Agrostis alpina Scop.	*Agrostis alpina* Scop.		NT				+				NT	+		CR	B1ab(i,ii,iii)				+					
Agrostis rupestris All.	*Agrostis rupestris* All.		LC				+					+		CR	C2a(i)				+					
Aira elegantissima Schur	*Aira elegantissima* Schur		NT					RE								+			+					
Ajuga laxmannii (Murray) Benth.	*Ajuga laxmannii* (L.) Benth.		NT		RE														+			+		
Ajuga pyramidalis L.	*Ajuga pyramidalis* L.		VU	B1ab(iii)	CR	A2e; B1a(i)b(v)													+					
Alchemilla crinita Buser	*Alchemilla crinita* Buser		NT				+	EN	B2a; B2b(iii)			+							+					
Alchemilla filicaulis Buser	*Alchemilla filicaulis* Buser		VU	B1ab(iii)			+	EN	B2a; B2b(iii)			+												
Alchemilla glaucescens Wallr.	*Alchemilla glaucescens* Wallr.		NT				+	CR	B2a; B2b(iii)			+							+					
Alchemilla micans Buser	*Alchemilla micans* Buser		LC				+	VU	B2a; B2b(iii)			+			+				+					
Alchemilla mollis (Buser) Rothm.	*Alchemilla acutiloba* Opiz		NT					EN	B2a; B2b(iii)			+			+				+					
Alchemilla monticola Opiz	*Alchemilla monticola* Opiz		NT				+	VU	B2a; B2b(iii)			+			+				+					
Alchemilla monticola Opiz	*Alchemilla hungarica* Soó		EN	B2ab(iii)				EN	B2a; B2b(iii)			+												
Alchemilla subcrenata Buser	*Alchemilla subcrenata* Buser		LC				+	EN	B2a; B2b(iii)			+			+				+					
Aldrovanda vesiculosa L.	*Aldrovanda vesiculosa* L.	B, H	CR	A2c													CR	A2						
Alisma gramineum Lej.			VU	B1ab(iii)																				
	Alisma gramineum C. C. Gmel.	M						EN	B2a; B2b(iii)															
	Alisma gramineum Lej.				CR	B2a(i)c(ii,iv)													+					
Allium angulosum L.	*Allium angulosum* L.		NT		VU	B2a(i)b(iii,iv,v)				+		+			+				+					
Allium carinatum L. subsp. *carinatum*	*Allium carinatum* L. subsp. *carinatum*		NT		NT		+	EN	B2b(iii, iv)			+										+		
Allium carinatum subsp. *pulchellum* (G. Don) Bonnier & Layens	*Allium cirrhosum* Vand.		VU	B1ab(i,iv)	RE							+							+					
Allium ericetorum Thore	*Allium ericetorum* Thore		NT		CR	B2a(ii)b(iii,iv,v); D													+					
Allium obliquum L.	*Allium obliquum* L.		EN	B2ac(i)													CR	B2a; B2c(i)						
Allium paniculatum L. subsp. *paniculatum*	*Allium paniculatum* L. subsp. *paniculatum*		NT		CR	B2a(ii)b(iii,v); D				+									+			+		

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Allium saxatile M. Bieb.	*Allium moschatum* L.	M	NT					EN	C2a(ii)										+			+		
Allium strictum Schrad.	*Allium strictum* Schrad.		CR	B2ab(iii,v); C2a(ii)	CR	B2a(i)b(iii,v); C2a(ii)																		
Allium ursinum L.	*Allium ursinum* L.		LC				+			+			+	VU	A2abcd				+			+		
Allium victorialis L.	*Allium victorialis* L.		LC				+	EN	B2a; C2a(ii)				+			+			+			+		
Althaea cannabina L.	*Althaea cannabina* L.	M	NT		CR	B1a(ii)b(iii); D				+									+			+		
Alyssoides utriculata (L.) Medik.	*Alyssum utriculatum* L.		VU	B1ab(i)													CR	C2b				+		
Alyssum montanum L. subsp. *montanum*	*Alyssum montanum* L. subsp. *montanum*		LC				+			+							CR	B2a; B2c(iii)				+		
Alyssum tortuosum subsp. *heterophyllum* Nyár.	*Alyssum tortuosum* Waldst. & Kit. subsp. *heterophyllum* Nyár.		EN	B2ab(ii,iii,iv,v)	EN	B2a(ii)b(ii,iii,iv,v)																		
Anacamptis coriophora (L.) R. M. Bateman, Pridgeon & M. W. Chase			NT																					
	Orchis coriophora L.							EN	B2b(ii, iii); B2c(iii,iv); C2b		RE								+	NT				
	Anacamptis coriophora (L.) R. M. Bateman, Pridgeon & M. W. Chase				CR	A2acd; B2a(i)(i,ii,iii,iv)								EN	A2abcd										
Anacamptis laxiflora (Lam.) R. M. Bateman, Pridgeon & M. W. Chase	*Anacamptis laxiflora* (Lam.) R. M. Bateman, Pridgeon & M. W. Chase		NT											CR	B1ab(i,ii,iv,v)				+					
Anacamptis morio (L.) R. M. Bateman, Pridgeon & M. W. Chase			LC																					
	Orchis morio L.						+			+	EN	A2a; C2a(i)							+			+		
	Anacamptis morio (L.) R. M. Bateman, Pridgeon & M. W. Chase Pridgeon & M. W. Chase														VU	A2abcd								
Anacamptis palustris subsp. *elegans* (Heuff.) R. M. Bateman, Pridgeon & M. W. Chase			VU	B1ab(i,iii,iv)c(iii,iv)																				
	Anacamptis palustris subsp. *elegans* (Heuff.) R. M. Bateman, A. M. Pridgeon & M. W. Chase				CR	A2ac; B2a(i)b(i,ii,iii,iv)c(iv)																			
	Orchis elegans Heuff.							VU	B2b(iii, iv); B2c(iii)										+					
Anacamptis palustris (Jacq.) R. M. Bateman, Pridgeon & M. W. Chase subsp. *palustris*			CR	B1ab(iii,iv)c(iv)																				
	Anacamptis palustris (Jacq.) R. M. Bateman, A. M. Pridgeon & M. W. Chase subsp. *palustris*				CR	B2a(ii)b(iii,iv)c(iv); D																			
	Anacamptis palustris (Jacq.) R. M. Bateman, Pridgeon & M. W. Chase													CR	A4abcd									
	Orchis palustris Jacq.							CR	B2a; C2a(ii)															
Anacamptis pyramidalis (L.) Rich.	*Anacamptis pyramidalis* (L.) Rich.		NT		VU	A2ac; B2a(i)b(i,ii,iii,iv)c(iv); C1+C2b		VU	B2b(iii); C1										+			+		
Anagallis minima (L.) E. H. L. Krause	*Centunculus minimus* L.		NT		CR	B1a(i)b(iii)c(iv)		CR	A4		+								+					
Andromeda polifolia L.	*Andromeda polifolia* L.		NT		EN	A2ac; B2a(i)b(i,ii,iii)					+					+			+					
Androsace maxima L.	*Androsace maxima* L.		VU	B1ab(i,iii,iv)c(iii,iv)	CR	B2a(i)b(ii,iii,iv)		EN	B2b(i,iii,iv)+c(ii,iii,iv); C2b										+					
Androsace obtusifolia All.	*Androsace obtusifolia* All.		LC		LC						EN	C2a(i); D							+					
Androsace villosa L.	*Adrosace villosa* L. subsp. *arachnoidea* (Schot, Nyman & Kotschy)		NT		VU	D2(i,ii)													+					
Andryala laevitomentosa (Nyár.) Greuter	*Andryala levitomentosa* (Nyár.) P. D. Sell	B, E	CR	B2ab(ii)													CR	B2a; B2b(ii)						
Anemone narcissiflora L.	*Anemone narcissiflora* L.		LC				+			+				VU	A2abcd				+					
Angelica palustris (Besser) Hoffm.	*Angelica palustris* (Besser) Hofm.	B, H	CR	B1ac(iii)													CR	B1a; B1c(iii)						
Anchusa azurea Mill.	*Anchusa azurea* Mill.	A	VU	B1ab(i,iv)			+	VU	B2ab(i, ii, iv)							+			+					
Anogramma leptophylla (L.) Link.	*Anogramma leptophylla* (L.) Link.		CR	B2ab(ii); C2a(ii)				CR	B2a; C2a(ii)															
Antennaria carpatica (Wahlenb.) Bluff & Fingerh.	*Antennaria carpatica* (Wahlenb.) Bluff & Fingerh.	E	LC				+				+			CR	C2a(i)									
Anthemis cretica subsp. *carpatica* (Willd.) Grierson	*Anthemis carpatica* Waldst. & Kit ex Willd.	E	NT											CR	B2ab(iv,v)				+					
Anthericum liliago L.	*Anthericum liliago* L.		NT					RE								+			+					
Apera interrupta (L.) P. Beauv.	*Apera interrupta* (L.) P. Beauv.		VU	B1ab(iii)				RE											+					
Aphanes arvensis L.	*Aphanes arvensis* L.	A	NT		EN	A2ac; B2a(i)b(i,iii,iv)c(iv)				+	+					+			+					
Aphanes australis Rydb.			EN	B1ab(iii,iv)c(iv)																				
	Aphanes australis Rydb.	A, M	CR	B1ab(iii,iv)	RE						+													
	Aphanes microcarpa (Boiss. & Reut.) Rothm.		CR	D													CR	D						

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Aquilegia nigricans Baumg.			DD																					
	Aquilegia nigricans Baumg.													EN	D				+					
	Aquilegia nigricans Baumg. subsp. *nigricans*							VU	A3cd										+					
	Aquilegia nigricans subsp. *subscaposa* (Borbás) Soó	E															CR	B2a; B2c(iii)						
Aquilegia transsilvanica Schur	*Aquilegia transsilvanica* Schur	E	NT											CR	B1ab(i,ii,iii,iv,v)				+					
Arabidopsis halleri (L.) O'Kane & Al-Shehbaz	*Cardaminopsis halleri* (L.) Hayek		LC				+	CR	B2ab(iii, v); C2a(i)				+			+			+					
Arabis alpina L..	*Arabis alpina* L..	N	LC				+	VU	A3c; D2				+			+			+					
Arabis nova Vill.	*Arabis nova* Vill.		NT		CR	B2a(ii)b(iii)c(iv)													+					
Arabis pauciflora (Grimm) Garcke	*Arabis pauciflora* (Grimm) Garcke	M	RE		RE																			
Arabis planisiliqua subsp. *nemorensis* (Hoffm.) Soják	*Arabis nemorensis* (Hoffm.) W. D. J. Koch		EN	A2ac; B2ab(ii,iii,v)	EN	A2ac; B2a(ii)b(ii,iii,v)																		
Arabis procurrens Waldst. & Kit.	*Arabis procurrens* Waldst. & Kit.	N	NT		RE														+					
Arctostaphylos alpinus (L.) Spreng.	*Arctostaphylos alpina* (L.) Spreng.		VU	D2	VU	D2(i,ii)																		
Arctostaphylos uva-ursi (L.) Sprengel	*Arctostaphylos uva-ursi* (L.) Spreng.		LC				+						+				VU	C2a(i)		VU	A1b,c,d;A2b,c,d; B2b,c,e			
Arenaria grandiflora L.. subsp. *grandiflora*	*Arenaria grandiflora* L..		CR	B2ab(iii)																			CR	B2a(ii)b(iii)
Arenaria procera subsp. *glabra* (Williams) Holub	*Arenaria procera* subsp. *glabra* (Williams) Holub	M	NT		EN	A2ac; B2a(ii)b(iii,iv,v)c(iv)				+									+					
Armeria alpina Willd.	*Armeria alpina* Willd.		EN	B2ab(iii)	CR	B2a(ii)b(iii)													+					
Armeria maritima (Mill.) Willd. subsp. *halacensis* (Simonk.) P. Silva	*Armeria halacensis* Simk.		CR	B1ab(iv)													CR	B1a; B1b(iv)						
Armeria maritima subsp. *elongata* (Hoffm.) Bonnier	*Armeria elongata* (Hoffm.) K. Koch		EN	B2ab(iii,iv)				EN	B2ab(iii, iv)				+											
Armoracia macrocarpa (Willd.) Baumg.	*Armoracia macrocarpa* (Waldst. & Kit.) Kit. ex Baumg.	B, M	RE					RE																
Arnica montana L..	*Arnica montana* L..		NT										+	VU	A2abcd				+					
Artemisia alba Turra	*Artemisia alba* Turra		VU	B1ab(iii,v)				EN	B2ab(iii, v); D										+					
Artemisia austriaca Jacq.	*Artemisia austriaca* Jacq.	A, M	VU	B2ab(ii,iii,iv)	CR	A2ace; B2a(ii)b(ii,iii,v)						+							+					
Artemisia pancicii (Janka) Ronniger	*Artemisia pancicii* Ronniger ex Danihelka & Marhold	H*	CR	B1ab(iii,v); C2a(i)																			CR	B1a(ii)b(iii,v); C2a(i)
Asperula arvensis L..	*Asperula arvensis* L..	A	CR	B1ab(i,ii,iii)c(iv)	RE														+					
Asperula neilreichii Beck	*Asperula neilreichii* Beck		VU	B1ab(i,iii,iv,v)	EN	B1a(i,ii)b(ii,iii,iv,v)													+					
Asplenium adiantum-nigrum L.. subsp. *adiantum-nigrum*	*Asplenium adiantum-nigrum* L..		LC		NT			VU	B2a; B2b(iii)					EN	A2abcd				+		+			
Asplenium adiantum-nigrum subsp. *onopteris* (L.) Heufl.	*Asplenium onopteris* L..		EN	C1													EN	C1						
Asplenium adulterinum Milde	*Asplenium adulterinum* Milde	H	VU	B1ab(i,iii,iv,v)	CR	B2a(i)b(iii,iv,v)											CR	C2a(i)			+			
Asplenium ceterach subsp. *bivalens* (D. E. Mey.) Greuter & Burdet	Asplenium ceterach subsp. bivalens (D. E. Mey.) Greuter & Burdet		NT		CR	B2a(ii)b(iii); D				+									+					
Asplenium cuneifolium Viv.	*Asplenium cuneifolium* Viv.		NT		CR	B2a(i)b(iii,iv,v)										+			+					
Asplenium lepidum C. Presl subsp. *lepidum*	*Asplenium lepidum* C. Presl subsp. *lepidum*		EN	B1ab(v); D				EN	B2a; D1								CR	C2a(i)						
Asplenium platyneuron (L.) Britton, Sterns & Poggenb.	Asplenium platyneuron (L.) . Britton, Sterns & Poggenb.		CR	D	CR	D																		
Asplenium septentrionale (L.) Hoffm.	*Asplenium septentrionale* (L.) Hoffm.		LC				+			+	VU	B2a				+			+					
Asplenium viride Huds.	*Asplenium viride* Huds.		LC				+	EN	B2b(iii, iv); C2a(i)				+			+			+			+		
Aster alpinus L..	*Aster alpinus* L..		LC				+						+	EN	A2abcd				+	LC				
Astragalus australis (L.) Lam.	*Astragalus krajinae* Domin	E	NT				+						+	CR	B1ab(iii,iv,v)									
Astragalus austriacus Jacq.	*Astragalus austriacus* Jacq.	M	NT		EN	B1a(ii)b(iii)				+														
Astragalus danicus Retz.	*Astragalus danicus* Retz.		VU	B1ab(iii)	VU	B1a(i)b(iii)																		
Astragalus dasyanthus Pall.	*Astragalus dasyanthus* Pall.	M	EN	C1	RE			EN	C1															
Astragalus depressus L..	*Astragalus depressus* L..		EN	B1ab(i)													CR	D			+			
Astragalus ecscapus L..	*Astragalus ecscapus* L..	M	VU	A3cd	RE?			VU	A3cd															
Astragalus frigidus (L.) A. Gray	*Astragalus frigidus* (L.) A. Gray		NT				+				VU	C2a(i)							+					
Astragalus glycyphylloides DC.	*Astragalus glycyphylloides* DC. subsp. *serbicus* (Reichenb.) Vasić & Niketić	M	VU	B1ab(ii)																VU	B1			
Astragalus penduliflorus Lam.	*Astragalus penduliflorus* Lam.		NT		NT		+				CR	B2a; C2a(i)					CR	D						
Astragalus pseudopurpureus Guşul.	*Astragalus pseudopurpureus* Gusuleac	B, E	EN	B1ac(i)													EN	B1a; B1c(i)						
Astragalus roemeri Simonk.	*Astragalus roemeri* Simonkai	E	EN	B1ac(iii)													EN	B1a; B1c(iii)						

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Astragalus vesicarius L. subsp. *vesicarius*	*Astragalus vesicarius* L. subsp. *albinus* (Waldst. & Kit.) Braun-Blanq.		VU	D2				VU	D2															
Astragalus vesicarius L. subsp. *vesicarius*	*Astragalus vesicarius* L. subsp. *vesicarius*		VU	D2	VU	D2(i)																		
Athamanta turbith subsp. *hungarica* (Borbás) Tutin	*Athamanta hungarica* Borbás	E	VU	B1ab(i)															+	EN	B1			
Atriplex rosea L.	*Atriplex rosea* L.	A	DD		VU	B2a(i)c(ii,iv)							+			+			+					
Atropa belladonna L.	*Atropa belladonna* L.		LC				+			+			+	VU	A2abcd				+					
Aubrieta columnae Guss.	*Aubrieta columnae* Guss. subsp. *croatica* (Schott, Nyman & Kotschy)		CR	C2a(i)													CR	C2a(i)						
Barbaraea stricta Andrz.	*Barbaraea stricta* Andrz.		NT				+			+			+			+	CR	C2b						
Barbarea vulgaris R. Br.	*Barbarea vulgaris* W. T. Aiton subsp. *lepuznica* (Nyár.) Soó	E	CR	B2ac(iii)													CR	B2a; B2c(iii)						
Bassia sedoides (Pall.) Asch.	*Bassia sedoides* (Pall.) Asch.	M	CR	C1; D				CR	C1; D															
Bellardiochloa variegata (Lam.) Kerguélen			NT																					
	Bellardiochloa variegata (Lam.) Kerguélen				VU	D1+D2(i)													+					
	Bellardiochloa violacea (Bellardi) Chiov.										EN	B2a; C2a(i)		EN	A2abcd									
Betula humilis Schrank.	*Betula humilis* Schrank.		CR	B2ac(iii)												+	CR	B2a; B2c(iii)						
Betula kotulae Zaver.	*Betula obscura* A. Kotula		EN	B1ab(i,ii,iii,iv)									+	CR	B1ab(i,ii,iii,iv)									
Betula nana L.	*Betula nana* L.		CR	B1ac(i)	RE						RE						CR	B1a; B1c(i)						
Betula oycoviensis Besser	*Betula ×oycoviensis* Besser		VU	B1ab(iii)							VU	C2a(ii)							+					
Betula pubescens Ehrh.	*Betula pubescens* Ehrh.		LC				+	VU	B2a; C1; C2a(i)				+			+			+					
Bifora radians M. Bieb.	*Bifora radians* M. Bieb.	A	NT		CR	A2ac; B2a(i)b(i,iii,iv)c(iii,iv)				+						+			+			+		
Biscutella laevigata L.	*Biscutella laevigata* L.		LC				+	CR	A2c; B2a(i,ii,iv,v); C2a(i); D				+	EN	A4abc				+			+		
Blechnum spicant (L.) Roth.	*Blechnum spicant* (L.) Roth		LC				+	CR	D1				+			+			+					
Blysmus compressus (L.) Link	*Blysmus compressus* (L.) Panz.		LC				+	EN	B2a; B2b(iii)				+			+			+					
Bolboschoenus maritimus (L.) Palla	*Bolboschoenus maritimus* (L.) Palla	M	DD		EN	B2a(ii)b(ii,v)c(iv)				+						+								
Bolboschoenus planiculmis (F. Schmidt) T. V. Egorova	*Bolboschoenus planiculmis* (F. Schmidt) T. V. Egorova	A, M	VU	B2ac(ii,iii,iv)	VU	B2a(i,ii)c(ii,iii,iv)							+											
Bolboschoenus yagara (Ohwi) Y. C. Yang & M. Zhan	*Bolboschoenus yagara* (Ohwi) Y. C. Yang & M. Zhan	A	CR	B2ac(iv); C2b	CR	B2a(i)c(iv); C2b																		
Bombycilaena erecta (L.) Smoljan.	*Bombycilaena erecta* (L.) Smoljan.	M	VU	B1ab(i)	CR	B2a(ii)b(ii,iii,iv)				+														
Botrychium lanceolatum (S. G. Gmel.) Ångstr.	*Botrychium lanceolatum* (S. G. Gmel.) Ångstr.		RE								RE													
Botrychium lunaria (L.) Sw.	*Botrychium lunaria* (L.) Sw.		LC				+	VU	B2a; B2b(iii)				+	VU	B1ab(i,ii,iii)				+			+		
Botrychium matricariifolium W. D. J. Koch		B	EN	B1ab(iii,iv,v)																				
	Botrychium matricariifolium (A. Braun ex Döll) W. D. J. Koch				CR	A2ac; B2a(ii)b(iii,iv,v)							+												
	Botrychium matricariifolium (Retz.) A. Braun							RE																
	Botrychium matricariifolium A. Br. ex Koch													CR	C2a(i)									
	Botrychium ramosum (Roth) Asch.																CR	B1a; B1c(ii)						
Botrychium multifidum (S. G. Gmel.) Rupr.	*Botrychium multifidum* (S. G. Gmel.) Rupr.	B	VU	B1ab(iii,v)	CR	B2a(ii)b(ii,iii,v); C2a(i,ii); D		CR	B2a; B2b(iii); C1				+	CR	A4abc				+			+		
Botrychium virginianum (L.) Sw.			VU	B2ac(ii)																				
	Botrychium virginianum (L.) Sw.				RE																			
	Botrychium virginianum (L.) Sw. in Schrad.																VU	B2a; B2c(ii)						
Brassica elongata Ehrh. subsp. *elongata*	*Brassica elongata* Ehrh. subsp. *elongata*	M, N	RE		RE																			
Bromus pannonicus Kumm. & Sendtn.	*Bromus pannonicus* Kum. & Sentn.		VU	B2ab(iii,iv)				VU	B2b(iii, iv)										+			+		
Bromus secalinus L. subsp. *secalinus*	*Bromus secalinus* L. subsp. *secalinus*	A	NT		EN	A2ac; B1a(i)b(iii,iv,v)c(iv)		VU	B2b(iii, iv)				+			+			+			+		
Bupleurum longifolium L.	*Bupleurum longifolium* L.		LC				+	VU	C2a(i)		EN	B2a; C1a(i)				+			+			+		
Bupleurum pachnospermum Pančić	*Bupleurum pachnospermum* Pančić		VU	C1				VU	C1															
Bupleurum praealtum L.	*Bupleurum praealtum* L.		NT		CR	B1a(i)b(iii)		NT											+			+		
Bupleurum ranunculoides L.	*Bupleurum ranunculoides* L.	E	NT				+						+	CR	B1ab(i,iii)				+					
Bupleurum rotundifolium L.	*Bupleurum rotundifolium* L.	A	NT		CR	B2a(i)b(i,iii)				+			+			+						+		
Bupleurum tenuissimum L.	*Bupleurum tenuissimum* L.	A	VU	B1ab(i,iii)	CR	B2a(i)b(i,iii)				+				VU	A4bcd									
Calamagrostis canescens (Weber) Roth	*Calamagrostis canescens* (Weber) Roth em. Druce		NT					VU	B2a; B2b(iii)				+			+			+					
Calamagrostis purpurea subsp. *phragmitoides* (Hartm.) Tzvelev	*Calamagrostis phragmitoides* Hartm.		CR	C2a(ii)				CR	C2a(ii)															
Calla palustris L.	*Calla palustris* L.		NT		VU	A2ac; B1a(i)b(iii,iv,v)+B2a(i)b(iii,iv,v)							+			+			+					
Callianthemum coriandrifolium Rchb.	*Callianthemum coriandrifolium* Rchb.		NT		LC		+				NT		+	CR	C2a(ii)				+					
Callitriche hamulata Kütz ex W. D. J. Koch	*Callitriche hamulata* W. D. J. Koch		EN	B2ac(iii,iv)	EN	B2a(ii)c(iii,iv)							+											
Calluna vulgaris (L.) Hull	*Calluna vulgaris* (L.) Hull		LC				+			+			+			+			+	EN	B1;B2b,c			

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Camelina alyssum (Mill.) Thell. subsp. *alyssum*	*Camelina alyssum* (Mill.) Thell. subsp. *alyssum*	A, M	RE		RE			RE			RE													
Camelina alyssum subsp. *integerrima* (Čelak.) Smejkal	*Camelina alyssum* subsp. *integerrima* (Čelak.) Smejkal	A	RE		RE						RE													
Camelina rumelica Velen. subsp. *rumelica*	*Camelina rumelica* Velen. subsp. *rumelica*	M	CR	B1ab(iii,iv,v)c(iv)	CR	A2ac; B2a(i)b(iii,iv,v)c(iv)										+								
Camelina sativa (L.) Crantz subsp. *sativa*	*Camelina sativa* (L.) Crantz subsp. *sativa*	A	RE		RE											+								
Camelina sativa subsp. *zingeri* (Mirek) Smejkal	*Camelina sativa* subsp. zingeri (Mirek) Smejkal	N	RE?		RE?																			
Campanula carpatica Jacq.	*Campanula carpatica* Jacq.	E	LC				+							EN	A4abcd				+					
Campanula crassipes Heuff.	*Campanula crassipes* Heuff.	E	VU	B1ab(i)													EN	B1a; B1c(i)		VU	B1a; B2b(iii)			
Campanula kladniana (Schur) Witasek	*Campanula kladniana* (Schur) Witasek	E	NT											VU	A4abcd				+					
Campanula latifolia L.	*Campanula latifolia* L.		NT				+	EN	B2b(iii)+c(iv)				+			+			+			+		
Campanula macrostachya Willd.			NT																					
	Campanula macrostachya Waldst. & Kit. ex Willd.				EN	B1a(i)b(iii)													+					
	Campanula macrostachya Kit.							VU	A4cd															
Campanula rapunculus L.	*Campanula rapunculus* L.		NT		EN	B1a(i)b(i,iii)				+						+			+			+		
Cardamine dentata Schult.	*Cardamine dentata* Schult.		VU	B1ab(iii,iv)	EN	B2a(i)b(iii)							+			+								
Cardamine enneaphyllos (L.) Crantz	*Dentaria enneaphyllos* L.		LC				+						+				CR	B1a; B1c(iv)						
Cardamine glauca DC.	*Cardamine glauca* Spreng. ex DC		CR	C2a(i)													CR	C2a(i)						
Cardamine parviflora L.	*Cardamine parviflora* L.	M	NT							+						+	EN	C2b		EN				
Carduus collinus Waldst. & Kit.	*Carduus collinus* Waldst. & Kit.		LC				+			+	VU	B2a; C2a(i)		EN	D				+					
Carduus defloratus subsp. *summanus* (Pollini) Arcang.	*Carduus crassifolius* Willd. subsp. *glaucus* (Baumg.) Kazmi		LC				+	EN	A2ac; B2a(iii)				+											
Carduus hamulosus Ehrh.	*Carduus hamulosus* Ehrh.	M	CR	B1ab(i)				RE											+					
Carex appropinquata Schumach.	*Carex appropinquata* Schumach.		NT		VU	A2ac; B1a(i)b(iii,iv)		VU	B2a; B2b(iii)				+			+			+					
Carex atrofusca Schkuhr	*Carex atrofusca* Schkuhr		VU	D2	VU	D2(i,ii)																		
Carex bicolor All.	*Carex bicolor* All.		EN	B1ab(i,iii,iv,v)										EN	B1ab(i,ii,iii,iv,v)		EN	C2a(i)						
Carex bigelowii subsp. *dacica* (Heuff.) T. V. Egorova	*Carex dacica* Heuff.		NT								VU	B2a				+			+					
Carex bigelowii subsp. *rigida* W. Schultze-Motel	*Carex bigelowii* Torr. ex Schwein. subsp. *rigida* W. Schultze-Motel		NT				+				EN	B2a							+					
Carex brevicollis DC.	*Carex brevicollis* DC.		LC		VU	D2(i,ii)				+						+			+	NT				
Carex buxbaumii Wahlenb.	*Carex buxbaumii* Wahlenb.		NT		CR	B2a(ii)b(iii)		CR	C2a(ii)				+	VU	A2abcd				+					
Carex canescens L.	*Carex canescens* L.		LC		LC		+	EN	B2a; B2b(iii)				+			+			+					
Carex cespitosa L.	*Carex cespitosa* L.		LC				+	EN	B2a; B2b(iii)				+			+			+			+		
Carex davalliana Sm.	*Carex davalliana* Sm.		LC				+	RE					+	VU	A4abcd				+					
Carex depressa subsp. *transsilvanica* (Schur) T. V. Egorova	*Carex depressa* Link subsp. *transsylvanica* (Schur) T. V. Egorova		NT					EN	B2a; B2b(iv)				+			+			+					
Carex diandra Schrank	*Carex diandra* Schrank		NT		VU	A2ac; B2a(i)b(iii,iv,v)		CR	C2b				+			+			+					
Carex dioica L.	*Carex dioica* L. subsp. *dioica*		NT		VU	A2ac; B2a(i)b(iii,iv,v)							+			+			+					
Carex echinata Murray	*Carex echinata* Murr.		LC				+	CR	C2a(ii)				+			+			+					
Carex elongata L.	*Carex elongata* L.		NT				+	VU	B2a; B2b(iii)				+			+			+					
Carex ericetorum Pollich	*Carex ericetorum* Pollich		VU	B1ab(iii)				RE?					+						+					
Carex firma Host	*Carex firma* Host		LC				+						+				CR	B2a; B2c(ii); C2a(i)						
Carex fritschii Waisb.	*Carex fritschii* Waisb.		RE?		RE?																			
Carex fuliginosa Schkuhr	*Carex fuliginosa* Schkuhr		NT				+						+	VU	A1abc				+					
Carex halleriana Asso	*Carex halleriana* Asso		NT		CR	B2a(ii)b(iii)				+									+					
Carex hartmanii Cajander	*Carex hartmanii* Cajander		NT				+	VU	B2a; B2b(iii)				+			+			+					
Carex heleonastes L. f.	*Carex heleonastes* L. f.		CR	C2a(ii)													CR	C2a(ii)						
Carex hordeistichos Vill.	*Carex hordeistichos* Vill.	M	NT				+	VU	B2a; B2b(iii)										+					
Carex hostiana DC.	*Carex hostiana* DC.		NT		VU	A2ac; B2a(i)b(iii,iv)		EN	B2a; B2b(iii)							+			+					
Carex chordorrhiza L. f.	*Carex chordorrhiza* L. f.		VU	B1ab(iii)	CR	B2a(i)b(iii)										+	CR	C2a(i)						
Carex lasiocarpa Ehrh.	*Carex lasiocarpa* Ehrh.		NT		VU	A2ac; B2a(i)b(i,ii,iii,iv,v)		EN	B2a; B2b(iii)				+			+			+					
Carex limosa L.	*Carex limosa* L.		NT		EN	A2ac; B2a(i)b(ii,iii,iv,v)		RE					+			+			+					
Carex loliacea L.	*Carex loliacea* L.		CR	B2ac(iii); C2a(i)													CR	B2a; B2c(iii); C2a(i)						
Carex magellanica subsp. *irrigua* (Wahlenb.) Hiitonen	*Carex magellanica* subsp. *irrigua* (Wahlenb.) Hiitonen		EN	B1ab(iii)	CR	B2a(ii)b(iii); C1+C2a(ii)													+					
Carex melanostachya M. Bieb. ex Willd.	*Carex melanostachya* M. Bieb. ex Willd.		NT		VU	B2a(i)b(ii,iii,iv)				+									+					
Carex parviflora Host	*Carex parviflora* Host		NT		VU	D2(i,ii)					CR	C2a(i)							+					
Carex pauciflora Lightf.	*Carex pauciflora* Lightf.		NT		EN	B2a(ii)b(iii); C1+C2a(ii)					EN	A2a		VU	A1abcd				+					

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Carex pediformis subsp. *rhizodes* (Meinsh.) H. Lindb.			VU	B1ab(iii)																				
	Carex pediformis C. A. Mey. subsp. *rhizodes* (Blytt) A. Linb. fil.																CR	C2a(i)						
	Carex rhizina Lindb.				VU	B2a(ii)b(iii)										+								
Carex pseudocyperus L.	*Carex pseudocyperus* L.		NT				+	VU	B2a; B2b(iii)				+			+			+			+		
Carex pulicaris L.	*Carex pulicaris* L.		EN	A2ac; B2ab(i,ii,iii)	EN	A2ac; B2a(ii)b(i,ii,iii)							+											
Carex pyrenaica Wahlenb.	*Carex pyrenaica* Wahlenb.		VU	B1ab(iii)	RE														+					
Carex rostrata Stokes	*Carex rostrata* Stokes		LC				+	EN	B2a; B2b(iii)				+			+			+			+		
Carex rupestris All.	*Carex rupestris* All.		NT		NT		+				EN	B2a		EN	D				+					
Carex strigosa Huds	*Carex strigosa* Huds.		NT		VU	B2a(i)b(iii)		EN	C2a(ii); D1		NT					+			+					
Carex supina Wahlenb.	*Carex supina* Wahlbg.		VU	B2ab(iii)				VU	B2a; B2b(iii)															
Carex umbrosa Host	*Carex umbrosa* Host		NT		VU	A2ac; B2a(i)b(iii)		RE					+	LC					+					
Carex vaginata Tausch	*Carex vaginata* Tausch		CR	B1ab(iii)	CR	B2a(ii)b(iii)								CR	B1ab(i,ii,iii)									
Carthamus lanatus L.	*Carthamus lanatus* L.		NT		CR	A2ac; B1a(i)b(iii,iv,v)c(iv)				+									+			+		
Catabrosa aquatica (L.) P. Beauv.	*Catabrosa aquatica* (L.) P. Beauv.		NT				+	VU	B2b(iii, iv)				+			+			+					
Caucalis platycarpos L.	*Caucalis platycarpos* subsp. *muricata* (Čelak.) Holub	A	NT		EN	B1a(i)b(i,iii)c(iv)				+														
Centaurea affinis Friv. subsp. *affinis*	*Centaurea affinis* Friv.		CR	B2ab(iv)													CR	B2a; B2b(iv)						
Centaurea chrysolepis Vis.	*Centaurea chrysolepis* Vis.	M	VU	B1ab(ii)																VU	B1			
Centaurea phrygia subsp. *rarauensis* (Prodan) Dostál	*Centaurea carpatica* (Porcius) Porcius subsp. *rarauenssis* (Prodan) Ciocarlan	E	CR	D													CR	D						
Centaurea phrygia subsp. *ratezatensis* (Prodan) Dostál	*Centaurea pseudophrygia* C. A. Mey. subsp. *ratezatensis* (Prodan) Ciocarlan	E	VU	D1													VU	D1						
Centaurea solstitialis L. subsp. *solstitialis*	*Centaurea solstitialis* L. subsp. *solstitialis*	A, N	NT		CR(PE)					+														
Centaurium litorale subsp. *compressum* (Hayne) Kirschner	*Centaurium litorale* subsp. *compressum* (Hayne) Kirschner		EN	A2ac; B1ab(iii)	EN	A2ac; B1a(i)b(iii)																		
Cephalanthera damasonium (Mill.) Druce	*Cephalanthera damasonium* (Mill.) Druce		LC				+			+			+	EN	A1abc				+	LC				
Cephalanthera longifolia (L.) Fritsch	*Cephalanthera longifolia* (L.) Fritsch		LC		NT		+			+			+	VU	A2abc				+	LC				
Cephalanthera rubra (L.) Rich.	*Cephalanthera rubra* (L.) Rich.		LC		NT		+			+	CR	B2a; C2a(i)		VU	A2abcd				+	VU	B1			
Cephalaria pastricensis Dörfl. & Hayek	*Cephalaria pastricensis* Dörfl. & Hayek	M	EN	B1ab(iii)																EN	B1			
Cerastium alpinum L.			NT																					
	Cerastium alpinum L.				CR(PE)														+					
	Cerastium alpinum L. s. str.										CR	B2a				+								
Cerastium anomalum Schrank	*Dichodon viscidum* (M. Bieb.) Holub	M	NT		EN	A2ac; B2a(ii)b(iii,iv)				+														
Cerastium carinthiacum Vest	*Cerastium latifolium* L.		VU	D2	VU	D2(i)							+						+					
Cerastium cerastoides (L.) Britton	*Dichodon cerastioides* (L.) Rchb.		NT				+						+	EN	A4abc				+					
Cerastium uniflorum Clairv.	*Cerastium uniflorum* Clairv.		NT		VU	D2(i)					VU	B2a												
Ceratocephala testiculata (Crantz) Besser			NT																					
	Ceratocephala testiculata (Crantz) Roth	M, N						VU	A3c										+					
	Ceratocephala testiculata (Crantz) Besser	A			RE											+								
Chaerophyllum hirsutum L.	*Chaerophyllum hirsutum* L.		LC				+	CR	A3c; C2a(ii)				+			+			+			+		
Chaerophyllum nodosum (L.) Crantz	*Myrrhoides nodosa* (L.) Cannon	A, N	VU	D1+2	VU	D1+D2(i,ii)													+					
Chamorchis alpina (L.) Rich.	*Chamorchis alpina* (L.) Rich.		NT		NT		+				EN	B2a; C2a(i)							+					
Chenopodium foliosum Asch.	*Chenopodium foliosum* Asch.	A, N	NT		CR	B2a(i,ii)b(i,ii,iii,iv,v); C2a(i,ii); D										+			+					
Chenopodium chenopodioides (L.) Aellen	*Chenopodium chenopodioides* (L.) Aellen	M, N	EN	B2ac(ii,iii)																			EN	B2a(ii)c(ii,iii)
Chimaphila umbellata (L.) W. P. C. Barton	*Chimaphila umbellata* (L.) W. P. C. Barton		NT		EN	B2a(i)b(iii,iv,v); D2(i)		CR	C1				+			+	CR	C2a(i)						
Chrysanthemum zawadskii Herbich	*Chrysanthemum zawadskii* Herbich	B	VU	D2	VU	D2(i,ii)							+			+								
Chrysopogon gryllus (L.) Trin.	*Chrysopogon gryllus* (L.) Trin.		LC		VU	B1a(i)b(iii,iv,v)				+									+			+		
Cicuta virosa L.	*Cicuta virosa* L.		NT		EN	B2a(iv)b(iii,iv,v)		CR	A3c; B2ab(ii,iii,iv); C2a(i); D				+			+			+					
Cimicifuga europaea Schipcz.	*Cimicifuga europaea* Schipcz.		NT				+	CR	A3c; B2ab(ii,iii,iv); C2a(i); D				+			+			+					
Circaea alpina L.	*Circaea alpina* L.		LC				+	CR	B2ab(i,ii,iv); C2a(ii)				+			+			+					
Cirsium acaule Scop. subsp. *acaule*	*Cirsium acaule* Scop.		NT				+										EN	C2a(i)						
Cirsium eriophorum (L.) Scop.	*Cirsium eriophorum* (L.) Scop.		LC				+			+	VU	B2a							+			+		
Cirsium erisithales (Jacq.) Scop.	*Cirsium erisithales* (Jacq.) Scop.		LC				+	VU	A4c; C1				+			+			+			+		
Cirsium waldsteinii Rouy	*Cirsium waldsteinii* Rouy		NT		VU	A2ac; B2a(ii)b(iii,v)							+			+			+					
Cladium mariscus (L.) Pohl	*Cladium mariscus* (L.) Pohl	M	EN	A2ac; B1ab(iii,iv)	CR	A2ac; B2a(ii)b(iii,iv)													+					
Clematis alpina (L.) Mill.	*Clematis alpina* (L.) Mill.		LC				+	EN	A3c				+			+			+					
Clematis integrifolia L.	*Clematis integrifolia* L.	M	NT		VU	B1a(i)b(iii)				+						+								

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Clinopodium thymifolium (Scop.) Kuntze	*Micromeria thymifolia* (Scop.) Fritsch		EN	A4cd; C2a(ii)				EN	A4cd; C2a(ii)															
Cochlearia borzeana (Coman & Nyár.) Pobed.	*Cochlearia borzeana* (Coman & Nyár.) Pobed.	E	EN	C2b													EN	C2b						
Cochlearia tatrae Borbás	*Cochlearia tatrae* Borbás	E, H*	NT		NT		+				VU	B2a	+											
Coleanthus subtilis (Tratt.) Seidl	*Coleanthus subtilis* (Tratt.) Seidl	B, H	RE		RE																			
Colchicum arenarium Waldst. & Kit.	*Colchicum arenarium* W. & K.	B, H	RE					RE																
Colchicum autumnale L.	*Colchicum autumnale* L.		LC				+			+			+	VU	A1abcd				+			+		
Comarum palustre L.	*Comarum palustre* L.		NT		VU	A2ac; B2a(i)b(i,ii,iii,iv,v)					NT		+			+			+					
Conioselinum tataricum Hoffm.			NT																					
	Conioselinum tataricum Hoffm.				NT		+				VU	B2a							+					
	Conioselinum vaginatum (Spreng.) Thell.													CR	C2a(i)									
Conringia austriaca (Jacq.) Sweet	*Conringia austriaca* (Jacq.) Sweet	M	EN	A2ac; B1ab(iii)c(iv)	CR	A2ac; B2a(ii)b(iii)c(iv); D		RE											+					
Conringia orientalis (L.) Dumort.	*Conringia orientalis* (L.) Dumort.	A	NT		CR	A2ac; B1a(ii)b(iii,iv)c(iv)		RE					+			+			+					
Consolida regalis subsp. *paniculata* (Host) Soó	*Consolida regalis* subsp. *paniculata* (Host) Soó	A	DD		VU	B1b(iii)c(iii,iv)										+			+					
Convolvulus cantabrica L.	*Convolvulus cantabrica* L.	M	NT		EN	B2a(ii)b(iii)				+						+			+			+		
Corallorhiza trifida Châtel.	*Corallorhiza trifida* Châtel.		LC				+	EN	B2c(iii, iv); C2b				+	VU	A2abc				+					
Corispermum nitidum Kit. ex Schult.	*Corispermum nitidum* Kit. ex Schult.		CR(PE)		CR(PE)																			
Coronopus squamatus (Forssk.) Asch.	*Coronopus squamatus* (Forssk.) Asch. subsp. *squamatus*	A	VU	B1ab(i)c(iv)	EN	B1a(i)b(iii)c(iii)							+			+								
Cortusa matthioli L.	*Cortusa matthioli* L. subsp. *pubens* (Schott, Nyman & Kotschy) Jáv.		NT										+	CR	B2ab(i,ii,iii)				+					
Corydalis capnoides (L.) Pers.	*Corydalis capnoides* (L.) Pers.		NT		VU	A2ac; B2a(i)b(ii,iii,iv,v)					NT		+			+			+					
Corynephorus canescens (L.) P. Beauv.	*Corynephorus canescens* (L.) P. B.		VU	B2ab(iii,iv)				EN	B2a; B2b(iv)				+											
Cotoneaster tomentosus (Aiton) Lindl.	*Cotoneaster tomentosus* (Aiton) Lindl.		NT				+	RE			EN	B2a							+			+		
Crambe tataria Sebeók	*Crambe tataria* Sebeók	H	EN	A3cd				EN	A3c,d															
Crataegus rhipidophylla Gand.	*Crataegus lindmanii* Hrabětová		VU	B1ab(iii)	EN	A2ae; D							+						+					
Crepis jacquinii Tausch	*Crepis jacquinii* Tausch		LC				+						+	CR	C2a(i,ii)				+					
Crepis mollis (Jacq.) Asch.	*Crepis mollis* (Jacq.) Asch.		LC				+						+			+	CR	C2a(i)						
Crepis nicaeensis Pers.	*Crepis nicaeensis* Balb.	N	VU	A2ac; B1ab(i,iii)				EN	A2ac; B2ab(ii,iii)										+			+		
Crepis pannonica (Jacq.) K. Koch	*Crepis pannonica* (Jacq.) C. Koch		EN	A2ac; B2ab(iii,iv)				EN	A2ac; B2ab (iii; iv)															
Crepis praemorsa (L.) Walther	*Crepis praemorsa* (L.) Tausch		LC				+			+	CR	B2a; C2a(i)				+			+					
Crepis pulchra L.	*Crepis pulchra* L.	A	NT		VU	D2(i,ii)				+									+					
Crepis sibirica L.	*Crepis sibirica* L.		VU	B1ab(iii,iv)	EN	B1a(i)b(i,iii,iv)+B2a(i)b(i,iii,iv)													+					
Crocus vernus (L.) Hill subsp. *vernus*	*Crocus banaticus* J. Gay	E	NT											EN	A4abcd				+	RE				
Crupina vulgaris Cass.	*Crupina vulgaris* Cass.		NT		EN	A2ac; B2a(i)b(iii,iv,v)c(iv)				+												+		
Crypsis alopecuroides (Piller & Mitterp.) Schrad.			VU	B1ab(iii)																				
	Crypsis alopecuroides (Piller & Mitterpac.) Schrad.	M						VU	B2a; B2b(iii)							+						+		
	Heleochloa alopecuroides (Piller & Mitterp.) Host ex Roem.				CR	B2a(ii)b(iii)																			
Cryptogramma crispa (L.) Hook.	*Cryptogramma crispa* (L.) R. Br. ex Hook.		VU	B1ab(i,iv)	VU	B1a(ii)b(i,iv)											RE?							
Cuscuta epilinum Weihe			CR	A2ac; B1ab(i)																				
	Cuscuta epilinum Weihe	A						RE																
	Cuscuta epilinum Weihe ex Boenn.				RE						RE								+					
Cuscuta lupuliformis Krock.	*Cuscuta lupuliformis* Krock.	M	NT		CR	A4ac; B2a(i,ii)b(iii,iv)				+			+			+								
Cyanus triumfettii (All.) Á. Löve & D. Löve	*Centaurea triumfettii* All.		LC				+				VU	B2a							+					
Cynoglottis barrelieri (All.) Vural & Kit Tan	*Anchusa barrelieri* (All.) Vitman	M	VU	B2ab(ii,iii,iv)	RE			VU	B2b(ii,iii,iv)							+			+					
Cypripedium calceolus L.	*Cypripedium calceolus* L.	B, H	NT		NT		+	EN	A1; B2b(ii, iii, iv)		VU	C2a(i)		CR	D				+					
Cystopteris fragilis subsp. *alpina* (Lam.) Hartm.	*Cystopteris regia* (L.) Desv.		NT				+						+	VU	A4abc				+					
Cystopteris montana (Lam.) Desv.	*Cystopteris montana* (Lam.) Bernh. ex Desv.		LC				+						+	VU	B1ab(i,ii,iii,iv,v)				+					
Cystopteris sudetica A. Braun & Milde	*Cystopteris sudetica* A. Braun & Milde		NT				+						+	VU	A4abc				+					
Cytisus austriacus var. rochelii (Wierzb.) Cristof.			DD																					
	Cytisus rochelii (Wierzb.) Rothm.							VU	B2ab(i,ii,iii,iv)															
	Chamaecytisus rochelii (Wierzb.) Rothm.													EN	B2ab(i,ii,iii,iv)				+					
Cytisus podolicus Blocki	*Chamaecytisus podolicus* (Blocki) Klask.		VU	D2										VU	D2									
Dactylorhiza cordigera (Fr.) Soó	*Dactylorhiza cordigera* (Fr.) Soó		NT											VU	A2abcd				+					
Dactylorhiza fuchsii (Druce) Soó	*Dactylorhiza fuchsii* (Druce) Soó		LC				+	VU	B2b(ii, iii); C2b				+	LC					+					
Dactylorhiza incarnata subsp. *cruenta* (O. F. Müll.) P. D. Sell	*Dactylorhiza cruenta* (O. F. Müll.) Soó		CR(PE)		CR(PE)																			
Dactylorhiza incarnata subsp. *cruenta* (O. F. Müll.) P. D. Sell	*Dactylorhiza incarnata* subsp. *haematodes* (Rchb.) Soó		EN	B1ab(i)	CR	A2ace; B2a(i)b(iii,v)c(iv); C1				+															

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Dactylorhiza incarnata (L.) Soó subsp. *incarnata*			NT																					
	Dactylorhiza incarnata (L.) Soó subsp. *incarnata*						+			+	CR	B2a; C2a(i)							+	NT				
	Dactylorhiza incarnata (L.) Soó													EN	A4abcd									
Dactylorhiza incarnata subsp. *ochroleuca*. (Wüstnei ex Boll) P. F. Hunt & Summerh	*Dactylorhiza incarnata* (L.) Soó subsp. ochroleuca (Boll) P. F. Hunt & Summerh.		EN	B1ab(iii)							RE								+					
Dactylorhiza incarnata subsp. *pulchella* (Druce) Soó	*Dactylorhiza incarnata* subsp. *pulchella* (Druce) Soó		VU	A2e; B2b(iii,v)c(iv)	VU	A2e; B2b(iii,v)c(iv)				+														
Dactylorhiza maculata subsp. *elodes* (Griseb.) Soó	*Dactylorhiza maculata* subsp. *elodes* (Griseb.) Soó		CR	A2e; B2ab(iii)c(iv); C1	CR	A2e; B2a(i)b(iii)c(iv); C1																		
Dactylorhiza maculata subsp. *ericetorum*. (E. F. Linton) P. F. Hunt & Summerh	*Dactylorhiza ericetorum* (E. F. Linton) Aver.		CR	A2e; B2ab(iii)c(iv)	CR	A2e; B2a(i)b(iii)c(iv)																		
Dactylorhiza maculata (L.) Soó subsp. *maculata*			NT																					
	Dactylorhiza maculata (L.) Soó													VU	A2abcd				+					
	Dactylorhiza maculata (L.) Soó subsp. *maculata*				EN	A2e; B2a(i)b(iii)c(iv)														LC				
Dactylorhiza maculata subsp. *transsilvanica* (Schur) Soó		E	NT																					
	Dactylorhiza maculata subsp. *transsilvanica* (Schur) Soó				CR	A2e; B2a(i)b(iii)c(iv); C1														+					
	Dactylorhiza transsilvanica (Schur) Aver.												+	DD										
Dactylorhiza majalis (Rchb.) P. F. Hunt & Summerh.	*Dactylorhiza majalis* (Rchb.) P. F. Hunt & Summerh.		LC				+	VU	B2b(ii, iii); C2b				+	VU	A2abcd				+					
Dactylorhiza sambucina (L.) Soó	*Dactylorhiza sambucina* (L.) Soó		LC		NT		+	VU	B2b(ii, iii); C2b		EN	A2a; C2a(i)		VU	A2abcd				+					
Dactylorhiza viridis (L.) R. M. Bateman, Pridgeon & M. W. Chase	*Coeloglossum viride* (L.) Hartm.		LC				+	VU	B2b(iii, iv); C1				+	VU	A2abcd				+	VU	B1			
Daphne arbuscula Čelak.	*Daphne arbuscula* Čelak.	B, E, H*	VU	B1ab(i,iv)	VU	B1a(i)b(i,iv)																		
Daphne cneorum L.	*Daphne cneorum* L.		NT		VU	B1a(i)b(i,iii,iv)		EN	A4c; C2a(ii)										+	VU	B1;C2a;D2			
Daphne laureola L. subsp. *laureola*	*Daphne laureola* L.		VU	B1ac(iv)													VU	B1a; B1c(iv)		VU	B1			
Delphinium elatum L.	*Delphinium elatum* L. subsp. *nacladense* (Zapal.) Holub	E	CR	B1ab(iii)							CR	B2a; C2a(i)												
Dianthus barbatus subsp. *compactus* (Kit.) Heuff.	*Dianthus barbatus* subsp. *compactus* (Kit.) Heuff.		NT		VU	B2a(i)b(iii)							+			+			+					
Dianthus carthusianorum L.	*Dianthus carthusianorum* L. subsp. *saxigenus* (Schur) Jav.	E	NT								EN	B2a; C2b				+								
Dianthus collinus subsp. *glabriusculus* (Kit.) Thaisz	*Dianthus collinus* subsp. *glabriusculus* (Kit.) Thaisz		VU	B1ab(i)	EN	B2a(i)b(iii,iv)				+									+					
Dianthus henteri Griseb. & Schenk	*Dianthus henteri* Heuff. ex Griseb. & Schenk	E	VU	B2ac(ii)													VU	B2a; B2c(ii)						
Dianthus nitidus Waldst. & Kit.	*Dianthus nitidus* Waldst. & Kit.	B, E, H*	NT				+				RE													
Dianthus pelviformis Heuff.	*Dianthus pelviformis* Heuffel	M	VU	B1ab(ii)																VU	B1			
Dianthus petraeus subsp. *orbelicus* (Velen.) Greuter & Burdet	*Dianthus petreus* Waldst. & Kit. subsp. *orbelicus* (Velen.) Greuter & Burdet		CR	B2ac(iii)													CR	B2a; B2c(iii)						
Dianthus pinifolius subsp. *serbicus* Wettst.	*Dianthus pinifolius* Sm. subsp. *serbicus* Wettst.		CR	B2ac(ii)													CR	B2a; B2c(ii)						
Dianthus praecox Kit. subsp. *praecox*	*Dianthus plumarius* L. subsp. *praecox* (Kit. ex Schult.) Domin	E	NT				+	EN	A4cd; B2ab(ii,iii)				+											
Dianthus praecox subsp. *pseudopraecox* (Novák) Kmet'ová	*Dianthus praecox* subsp. *pseudopraecox* (Novák) Kmet'ová	E	VU	B1ab(iii)	VU	B1a(ii)b(iii)																		
Dianthus serotinus Waldst. & Kit.	*Dianthus serotinus* Waldst. & Kit.	B	VU	B1ab(iii)	CR	B2a(ii)b(iii)							+						+					
Dianthus superbus L. subsp. *superbus*	*Dianthus superbus* L. subsp. *superbus*		NT		EN	B2a(i)b(iii,iv)							+			+			+	VU	B2c			
Doronicum clusii (All.) Tausch	*Doronicum stiriacum* (Vill.) Dalla Torre		LC		LC		+						+	EN	A3bcd				+					
Doronicum hungaricum Rchb. f.			NT																					
	Doronicum hungaricum Rchb. f.				EN	B2a(i)b(ii,iii,iv); C2a(i)				+				CR	B2ab(iv,v)										
	Doronicum hungaricum (Sadl.) Rchb.																		+	VU	A1a,b,c,e;A2b,c; B2b,c,d			
Draba aizoides L.	*Draba aizoides* L.		NT				+						+	CR	B1ab(iii,iv,v)				+			+		
Draba aizoides subsp. *beckeri* (A. Kern.) Hörandl & Gutermann	*Draba aizoides* subsp. *beckeri* (A. Kern.) Hörandl & Gutermann		EN	B2ab(iii)	EN	B2a(ii)b(iii)																		
Draba dorneri Heuff.	*Draba dorneri* Heuff.	B, E, H	CR	B1ac(iii)													CR	B1a; B1c(iii)						

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Draba dubia Suter	*Draba dubia* Suter		NT		NT		+				EN	B2a; C2a(i)							+					
Draba fladnizensis Wulfen	*Draba fladnizensis* Wulfen		VU	C2b	VU	D1+D2(i,ii)											CR	C2b						
Draba haynaldii Stur	*Draba haynaldii* Stur	E	CR	B2ac(iii)													CR	B2a; B2c(iii)						
Draba lasiocarpa subsp. *klasterskyi* (Chrtek) Chrtek	*Draba lasiocarpa* subsp. *klasterskyi* (Chrtek) Chrtek	E	CR	B2ab(ii,iii,iv)	CR	B2a(i)b(ii,iii,iv)																		
Draba lasiocarpa Rochel subsp. *lasiocarpa*	*Draba lasiocarpa* Rochel subsp. *lasiocarpa*		NT					VU	A4c; C1										+			+		
Draba muralis L.	*Draba muralis* L.	M	NT		VU	B2b(ii,iii)c(iii,iv)				+									+			+		
Draba nemorosa L.	*Draba nemorosa* L.	M, N	NT		LC		+			+	EN	B2a; C2a(i)				+			+					
Draba pacheri Stur	*Draba pacheri* Stur		RE		RE																			
Draba siliquosa M. Bieb.			NT																					
	Draba siliquosa Clairv.										CR	B2a; C2a(i)												
	Draba siliquosa M. Bieb.				EN	B2a(ii)b(iii,iv,v); C2a(i)													+					
Draba simonkaiana Jáv.	*Draba simonkaiana* Jáv.	E	CR	B1ac(iii)													CR	B1a; B1c(iii)						
Draba tomentosa Clairv.	*Draba tomentosa* Clairv.		NT				+				EN	B2a; C2a(i)												
Dracocephalum austriacum L.	*Dracocephalum austriacum* L.	B, H	VU	B1ab(i,iv,v)	CR	B2a(i)b(ii,iv,v)		CR	A2ac								CR	C2a(i)						
Dracocephalum ruyschiana L.	*Dracocephalum ruyschiana* L.	B	EN	A2ac; B1ab(iii)				CR	A2ac; B2ab(iii); C2a(ii)										+					
Drosera intermedia Hayne	*Drosera intermedia* Hayne		EN	B1ab(iii)c(i)									+				CR	B1a; B1c(i)						
Drosera longifolia L.	*Drosera anglica* Huds.		VU	B1ab(iii,iv,v)c(iii)	EN	A2ac; B2a(i)b(iii,iv,v)							+			+	CR	B1a; B1c(iii)						
Drosera rotundifolia L.	*Drosera rotundifolia* L.		NT		VU	A2ac; B2a(i)b(iii,iv,v)		EN	A3cd				+			+			+					
Dryas octopetala L.	*Dryas octopetala* L.		LC		LC		+						+	EN	A4abcd				+					
Drymocallis rupestris (L.) Soják	*Drymocallis rupestris* (L.) Soják		NT		VU	B1a(i)b(iii)				+														
Drymochloa drymeja (Mert. & W. D. J. Koch) Holub	*Festuca drymeja* Mert. & W. D. J. Koch.		LC				+			+			+	VU	A4abcd									
Dryopteris borreri (Newman) Oberh. & Tavel	*Dryopteris affinis* subsp. *borreri* (Newman) Fraser-Jenk		VU	B1ab(i)				EN	D1				+			+			+					
Dryopteris cristata (L.) A. Gray	*Dryopteris cristata* (L.) A. Gray		VU	B1ab(i,iii,iv)	EN	B2a(ii)b(ii,iii,iv)		CR	C1; D1				+			+			+					
Dryopteris villarii (Bellardi) Schinz & Thell.	*Dryopteris villarii* (Bellardi) Schinz & Thell. subsp. *villarii*		RE								RE													
Echinops ritro subsp. *ruthenicus* (M. Bieb.) Nyman	*Echinops ritro* subsp. *ruthenicus* (M. Bieb.) Nyman		CR	B2ab(iii); C2a(i)	CR	B2a(i)b(iii); C2a(i)																		
Edraianthus serbicus Petrovič	*Edraianthus serbicus* (Ker.) Petrović	M	EN	B1ab(ii)																EN	B1			
Elatine alsinastrum L.	*Elatine alsinastrum* L.		VU	A4ac; B1ac(iii)				VU	A4acd; B2a,c							+			+					
Elatine ambigua Wight	*Elatine triandra* Schkuhr var. *pedicellata* Rouy & Fouc.		DD													+	CR	C2a(i)						
Elatine hexandra (Lapierre) DC.	*Elatine hexandra* (Lapierre) DC.		CR	C2a(i)													CR	C2a(i)						
Elatine hydropiper L.	*Elatine hydropiper* L.		EN	B1ab(i)c(iii,iv)									+			+	CR	C2a(i)						
Elatine triandra Schkuhr	*Elatine triandra* Schkuhr		EN	B1ab(i)c(iii,iv)									+				CR	C2a(i)				+		
Eleocharis carniolica W. D. J. Koch	*Eleocharis carniolica* W. D. J. Koch	B, H	NT		VU	B2a(i)b(iii,iv,v)c(iii,iv)		VU	C2b		EN	B2a; C2a(i)							+					
Eleocharis ovata (Roth) Roem. & Schult.	*Eleocharis ovata* (Roth) Roem. & Schult.		VU	B2ab(iii,v)c(iv)	VU	B2a(i)b(iii,v)c(iv)				+			+						+					
Empetrum nigrum L. subsp. *nigrum*	*Empetrum nigrum* L. subsp. *nigrum*		NT		VU	A2ac; B1a(i)b(iii,iv,v)							+			+			+					
Epilobium nutans F. W. Schmidt	*Epilobium nutans* F. W. Schmidt		NT		VU	B2a(i,ii)b(i,iv); D2(i)					EN	C2a(i)				+			+					
Epilobium palustre L.	*Epilobium palustre* L.		LC				+	VU	B2b(iii, iv)				+			+			+			+		
Epipactis albensis Nováková & Rydlo	*Epipactis albensis* Nováková & Rydlo		VU	B2ac(iii,iv)				EN	B2c(iii, iv); C2b				+											
Epipactis atrorubens (Hoffm.) Besser	*Epipactis atrorubens* (Hoffm.) Besser		LC				+			+			+	EN	A2abcd				+			+		
Epipactis exilis P. Delforge	*Epipactis exilis* P. Delforge		CR	B2ab(iii,iv); C2b				CR	B2a, B2b(iii, iv), C2b															
Epipactis greuteri H. Baumann & Künkele	*Epipactis greuteri* H. Baumann & Künkele		EN	D	EN	D							+											
Epipactis helleborine (L.) Crantz subsp. *helleborine*	*Epipactis helleborine* (L.) Crantz		LC				+			+			+	VU	A3abcd				+	LC				
Epipactis helleborine (L.) Crantz subsp. *helleborine*	*Epipactis voethii* Robatsch		NT		CR	B2a(i)b(iii)c(iv)				+			+											
Epipactis helleborine subsp. *leutei* (Robatsch) Kreutz	*Epipactis leutei* Robatsch		EN	B2ab(iii)c(iv)	EN	B2a(i)b(iii)c(iv)																		
Epipactis leptochila subsp. *futakii* (Mereďa & Potucek) Kreutz	*Epipactis futakii* Mereďa & Potůček		EN	B1ab(iv)	EN	D		EN	C2a(i)															

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Epipactis leptochila (Godfery) Godfery			NT																					
	Epipactis leptochila (Godfery) Godfery				VU	B2a(i)b(iii)c(iv)													+					
	Epipactis leptochila (Godfery) Godfery subsp. *leptochilla*							VU	C2b															
Epipactis leptochila subsp. *neglecta* Kümpel	*Epipactis neglecta* (Kümpel) Kümpel		NT		VU	B2a(i)b(iii)c(iv)				+														
Epipactis microphylla (Ehrh.) Sw.	*Epipactis microphylla* (Ehrh.) Sw.		NT		LC		+			+	EN	B2a		DD					+	EN	B1			
Epipactis nordeniorum Robatsch	*Epipcatis nordeniorum* Robatsch		VU	C2a(i)+2b				VU	C2a(i), C2b															
Epipactis palustris (L.) Crantz	*Epipactis palustris* (L.) Crantz		LC		NT		+	VU	A1; B2b(ii, iii, iv)				+	VU	A2abc				+					
Epipactis placentina Bongiorni & P. Grünanger	*Epipactis placentina* Bongiorni & Grünager		EN	B1ab(iii)c(iv)	EN	B2a(i)b(iii)c(iv)		CR	B2a, C2a(ii)															
Epipactis purpurata Sm.	*Epipactis purpurata* Sm.		NT		NT		+			+			+	VU	A1abc				+					
Epipactis purpurata Sm.	*Epipactis pseudopurpurata* Mereď a		NT		VU	B2a(i)b(iii)c(iv)				+			+											
Epipactis tallosii A. Molnár & Robatsch	*Epipactis tallosii* A. Molnár & Robatsch		NT				+	VU	B2a; B2b(iv)															
Epipogium aphyllum Sw.	*Epipogium aphyllum* Sw.		NT		NT		+	CR	B2a, B2c(iv)		VU	B2a		CR	A2abc				+			+		
Equisetum hyemale L.	*Equisetum hyemale* L.		NT				+	VU	B2a; B2b(iii)				+			+			+					
Equisetum sylvaticum L.	*Equisetum sylvaticum* L.		LC				+	VU	B2a; B2b(iii)				+			+			+					
Equisetum variegatum F. Weber & D. Mohr	*Equisetum variegatum* Schleich.		NT				+	EN	D1				+			+			+					
Erigeron alpinus L.			NT																					
	Erigeron alpinus L.													CR	B1ab(i,ii,iii,iv,v)				+					
	Erigeron alpinus L. subsp. *intermedius* (Schleich.) Pawl.						+				CR	B2a; C2a(i)												
Erigeron atticus Vill.	*Erigeron atticus* Vill.		NT		DD		+							CR	D				+					
Eriophorum angustifolium Honck.	*Eriophorum angustifolium* Honck.		LC				+	VU	B2a, B2c(iv)				+			+			+					
Eriophorum gracile Roth			NT																					
	Eriophorum gracile W. D. J. Koch							RE					+			+								
	Eriophorum gracile W. D. J. Koch ex Roth				CR	A2ac; B2a(i)b(iii,iv,v)c(iv)													+					
Eriophorum latifolium Hoppe	*Eriophorum latifolium* Hoppe		LC				+	VU	B2a, B2c(iv)				+			+			+					
Eriophorum vaginatum L.	*Eriophorum vaginatum* L.		LC				+	EN	B2a; C2a(ii)				+			+			+					
Erodium ciconium (L.) L'Hér.	*Erodium ciconium* (L.) L'Hér.	M	EN	B1ab(i)c(iii,iv)	CR	B1a(i)b(iii)c(iv)				+														
Eryngium planum L.	*Eryngium planum* L.	M	NT		VU	B2b(i,iii,iv)				+						+			+					
Erysimum crepidifolium Rchb.	*Erysimum crepidifolium* Rchb.		NT		EN	B1a(i)b(iii)		VU	B2ab(iii)										+	RE?				
Erysimum marschallianum M. Bieb.	*Erysimum marschallianum* Andr. ex Bieb.		NT				+													RE?				
Erysimum pallidiflorum Ják.		E	VU	A2ac; B1ab(i,iii,iv,v)																				
	Erysimum pallidiflorum Szépl. ex Ják.				VU	A2ac; B1a(i)b(iii,iv,v); C2a(i)																		
	Erysimum wittmannii Zaw. subsp. *pallidiflorum* (Ják.) Ják.							EN	B2ab(i,ii,iii)							+								
Erysimum pieninicum (Zapał.) Pawł.	*Erysimum pieninicum* (Zapał.) Pawł.	B, E, H*	VU	B2ab(ii); C2a(i)							VU	B2a; C2a(i)												
Erythronium dens-canis L.	*Erythronium dens-canis* L.		LC		VU	D2(i,ii)		EN	B2a; B2b(iii)					VU	A1abcd				+			+		
Euphorbia angulata Jacq.	*Euphorbia angulata* Jacq.		NT		VU	B2a(i,ii)b(iii)				+			+			+			+			+		
Euphorbia carpatica Wol.	*Euphorbia carpatica* Wol.	E	NT													+	CR	B1a; B1c(iii)						
Euphorbia lucida Waldst. & Kit.	*Euphorbia lucida* Waldst. & Kit.	M	NT		CR	B1a(i)b(iii)				+						+			+					
Euphorbia myrsinites L.	*Euphorbia myrsinites* L. subsp. *myrsinites*		VU	B1ab(i)													EN	B2a; B2c(ii)				+		
Euphorbia nicaeensis All. subsp. *nicaeensis*	*Euphorbia glareosa* subsp. *pannonica* (Host.) Kuzmanov		EN	B1ab(i)	CR	B1a(ii)b(iii)				+														
Euphorbia seguieriana Neck.	*Euphorbia sequieriana* subsp. *minor* (Sadler) Domin		CR	B1ab(iii)	CR	B1a(i)b(iii)																		
Euphorbia sojakii (Chrtek & Křisa) Dubovik	*Euphorbia austriaca* subsp. *sojakii* Chrtek & Křisa	E	NT		EN	B2a(i)b(ii,iii,iv,v); C2a(i)										+								
Euphorbia verrucosa L.	*Euphorbia verrucosa* L.		RE		RE																			
Euphrasia exaristata Smejkal	*Euphrasia exaristata* Smejkal	E	VU	B1ab(iii,v)	EN	B2a(ii)b(iii,v)					CR	B2a												
Euphrasia micrantha Rchb.	*Euphrasia micrantha* Rchb.		EN	B2ab(iii)	EN	B2a(ii)b(iii)																		
Euphrasia pectinata Ten.	*Euphrasia stricta* subsp. *pectinata* (Ten.) P. Fourn.		CR	B2ab(iii)	CR	B2a(i)b(iii)																		
Euphrasia slovaca subsp. *pseudomontana* (Kláš t.) Dostál	*Euphrasia slovaca* subsp. *pseudomontana* (Kláš t.) Dostál		EN	A2ac; B2ab(ii,iii,iv,v)	EN	A2ac; B2a(i)b(ii,iii,iv,v)																		
Euphrasia stipitata Smejkal	*Euphrasia stipitata* Smejkal	E	EN	B2ab(iii,v)	EN	B2a(ii)b(iii,v)																		

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Ferula heuffelii Heuff.	*Ferula heuffelii* Griseb. ex Heuffel		VU	B1ab(i)													EN	B2a; B2c(iii); D		VU	B1			
Ferula sadleriana Ledeb.	*Ferula sadleriana* Ledeb.	B, H*	VU	B1ab(iii)	CR	B2a(i)b(iii); C2a(i); D		EN	B2ab(ii,iii)										+					
Festuca alpina Suter subsp. *alpina*	*Festuca alpina* Suter subsp. *alpina*		EN	B2ab(iii,v); C2a(i)	EN	B2a(i,ii)b(iii,v); C2a(i)																		
Festuca amethystina L.	*Festuca amethystina* L.		NT				+	EN	B2a; B2b(iii); D1				+			+			+					
Festuca filiformis Pourr.	*Festuca tenuifolia* Sibth.		VU	B1ab(i)									+			+	EN	C2a(i)						
Festuca heterophylla Lam.	*Festuca heterophylla* Lam.		LC				+			+			+	VU	B1ab(i,ii,iii,iv,v)				+			+		
Festuca porcii Hack.	*Festuca porcii* Hack.	E	NT											EN	A2abcd				+					
Festuca stricta subsp. *saxatilis* (Schur) Foggi & Signorini	*Festuca saxatilis* Schur	E	VU	B1ab(i,iii,iv,v)	CR	B2a(ii)b(i,ii,iii,v); C2a(ii); D								CR	B1ab(i,ii,iii,iv,v)				+					
Festuca vojtkoi Penkzsa	*Festuca vojtkoi* Penksza		VU	B2ab(ii)				VU	B2a; D2															
Filago germanica (L.) Huds.	*Filago vulgaris* Lam.		NT		CR	A2ac; B2a(i,ii)b(iii,iv,v)c(iv)				+			+			+			+					
Fraxinus ornus L.	*Fraxinus ornus* L.	N	LC				+			+				CR	B2ab(i,ii,iii)				+			+		
Fritillaria meleagris L.	*Fritillaria meleagris* L.		NT		EN	A2ac		VU	B2a; B2b(iii)					VU	A2abcd				+					
Gagea bohemica (Zauschn.) Schult. & Schult. f.	*Gagea bohemica* (Zauschn.) Schult. & Schult. f. subsp. *bohemica*		NT		EN	B2a(i)b(iii)		VU	B2a; B2b(iii)															
Gagea minima (L.) Ker Gawl.			LC																					
	Gagea minima (L.) Ker Gawl.				VU	B2a(i)b(iv,v)							+			+			+	NT				
	Ornithogalum pannonicum Chaix							RE																
Gagea pusilla (F. W. Schmidt) Sweet	*Gagea pusilla* (F. W. Schmidt) Schult. & Schult. f.		LC		EN	B2a(i)b(iii)				+									+					
Gagea spathacea (Hayne) Salisb.	*Gagea spathacea* (Hayne) Salisb.		NT				+	VU	B2a; B2b(iii)							+			+					
Galatella cana (Waldst. & Kit.) Nees	*Aster sedifolius* L. subsp. *canus* (Waldst. & Kit.) Merxm.		VU	B2ab(i,ii,iii,iv)				VU	B2b(i,ii,iii,iv)															
Galatella villosa (L.) Rchb. f.	*Aster oleifolius* (Lam.) Wagenitz		EN	B2ab(iii)				EN	B2ab(iii)															
Galium abaujense Borbás	*Galium abaujense* Borbás	E	NT		VU	A2ac; B2a(i)b(iii,iv,v)				+						+			+					
Galium baillonii D. Brândză	*Galium bailloni* Brandza	E	EN	C2a(i)													EN	C2a(i)						
Galium boreale subsp. *exoletum* (Klokov) Soják	*Galium boreale* subsp. *exoletum* (Klokov) Soják	EN	B2ab(iii)																				EN	B2a(ii)b(iii)
Galium divaricatum Lam.			VU	B1ab(i,iii,iv)																				
	Galium divaricatum Lam.							RE																
	Galium divaricatum Pourr. ex Lam.	M			RE														+					
Galium lucidum All.	*Galium lucidum* All.		VU	B1ac(i)													VU	B1a; B1c(i)				+		
Galium pumilum Murray	*Galium pumilum* Murray		NT								CR	B2a				+			+					
Galium tenuissimum M. Bieb.	*Galium tenuissimum* M. Bieb.		NT		CR	B2a(ii)b(iii)c(iv)													+			+		
Galium tricornutum Dandy	*Galium tricornutum* Dandy	A	NT		CR	A2ac; B2a(i)b(iii,iv,v)c(iii,iv)				+			+			+			+			+		
Galium valdepilosum Heinr. Braun	*Galium valdepilosum* Heinr. Braun subsp. *valdepilosum*		EN	B2ab(iii)																			EN	B2a(ii)b(iii)
Genista tinctoria L.	*Genista oligosperma* (Andrae) Simonk.	E	NT										+	CR	B2ab(ii,iii)				+					
Genista tinctoria L.	*Genista ovata* subsp. *mayeri* (Janka) Nyman		RE		RE																			
Genista sagittalis L.	*Genistella sagittalis* (L.) Gams		NT				+	VU	B2b(iii)				+	CR	A2abcd				+					
Genista subcapitata Pančić	*Genista subcapitata* Pančić	M	VU	B1ab(ii); D2																VU	B1;D2			
Gentiana acaulis L.	*Gentiana acaulis* L.		NT											VU	A2abcd				+	NT				
Gentiana lutea L.	*Gentiana lutea* L.		NT											EN	A2abcd				+					
Gentiana nivalis L.	*Gentiana nivalis* L.		NT		NT		+			+			+	CR	C1				+					
Gentiana pneumonanthe L.	*Gentiana pneumonanthe* L.		NT		VU	B2a(i)b(i,iii,iv,v)				+			+			+			+					
Gentiana punctata L.	*Gentiana punctata* L.		LC		NT		+						+	VU	A4abcd				+					
Gentiana pyrenaica L.	*Gentiana laciniata* Kit. ex Kanitz		VU	A2abcd										VU	A2abcd									
Gentianella amarella subsp. *lingulata* (C. Agardh) Holub	*Gentianella amarella* subsp. *lingulata* (C. Agardh) Holub		NT		EN	A2ac; B2a(i,ii)b(ii,iii,iv,v)										+			+					
Gentianella amarella subsp. *lingulata* (C. Agardh) Holub	*Gentianella amarella* (L.) Börner subsp. *livonica* (Ledeb.) Dostál		EN	B2b(iii)c(ii,iii,iv)				EN	B2b(iii)+c(ii,iii,iv)															
Gentianella austriaca (A. Kern. & Jos. Kern.) Holub	*Gentianella austriaca* (A. Kern. & J. Kern.) Holub		VU	B2b(iii)c(ii,iii,iv)				VU	B2b(iii)+c(ii,iii,iv)				+						+					
Gentianella tenella (Rottb.) Börner	*Gentianella tenella* (Rottb.) Börner		NT				+				VU	B2a												
Geranium bohemicum L.	*Geranium bohemicum* L.		VU	B1ab(iii)	EN	B2a(i)b(iii)c(ii,iii,iv)													+					
Geranium rotundifolium L.	*Geranium rotundifolium* L.	N	NT		EN	B1a(i)b(iii)				+									+			+		
Geranium subcaulescens DC.	*Geranium cinereum* Cav. subsp. *subcaulescens* (L.,Her. ex DC.) Hayek		CR	B2ab(iv); D													CR	B2a; B2b(iv); D						
Geranium sylvaticum L.	*Geranium sylvaticum* L.		LC				+	CR	B2ab(i,ii,v); C1a(i,ii); D				+			+			+					

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Geum aleppicum Jacq.	*Geum aleppicum* Jacq.		NT				+	EN	B2b(iii)										+					
Geum rivale L..	*Geum rivale* L..		LC				+	CR	B2ab(iii); C2a(ii)				+			+			+					
Gladiolus imbricatus L..	*Gladiolus imbricatus* L..		LC				+	EN	B2a; B2b(iii)				+	VU	A1abcd				+			+		
Gladiolus palustris Gaudin	*Gladiolus palustris* Gaudin	H	EN	B1ab(iii)				CR	A4; D1					DD					+			+		
Glaucium corniculatum (L.) Rudolph	*Glaucium corniculatum* (L.) Rudolph	A, M	NT		CR	A4ac; B2a(ii)b(ii,iii,iv)c(iii,iv)				+									+					
Glaux maritima L..	*Glaux maritima* L..		EN	B2ab(iii,iv,v)	EN	B2a(i)b(iii,iv,v)																		
Globularia bisnagarica L..	*Globularia bisnagarica* L..		LC				+										CR	B2a; B2c(vi)						
Glyceria declinata Bréb.	*Glyceria declinata* Bréb.		VU	B2ab(iii)			+	VU	B2a; B2bb(iii)				+						+					
Glyceria nemoralis (R. Uechtr.) R. Uechtr. & Körn.	*Glyceria nemoralis* (Uechtr.) Uechtr. & Koern.		NT				+	VU	B2b(iii, iv)				+			+			+			+		
Gnaphalium hoppeanum W. D. J. Koch	*Gnaphalium hoppeanum* W. D. J. Koch		NT		EN	B2a(ii)b(ii,iv,v)					VU	Ca(i)												
Goodyera repens (L.) R. Br.	*Goodyera repens* (L.) R. Br.		LC				+						+	VU	A2abc				+					
Gratiola officinalis L..	*Gratiola officinalis* L..	M	NT		VU	B1a(i)b(iii)				+						+			+					
Gymnadenia carpatica (Zapal.) Teppner & E. Klein	*Nigritella carpatica* (Zapal.) Teppner, Klein & Zagulski	E	CR	C2b										CR	C2b									
Gymnadenia conopsea (L.) R. Br.	*Gymnadenia conopsea* (L.) R. Br.		LC				+			+			+	VU	A3bcd				+	LC				
Gymnadenia frivaldii Hampe ex Griseb.	*Pseudorchis frivaldii* (Hampe ex Griseb.)		CR	C2a(i)													CR	C2a(i)						
Gymnadenia odoratissima (L.) Rich.	*Gymnadenia odoratissima* (L.) Rich.		LC				+	EN	B2b(iv); C2a(i)				+	CR	B1ab(i,ii,iii,iv,v)				+					
Gypsophila fastigiata subsp. *arenaria* (Waldst. & Kit.) Domin	*Gypsophila fastigiata* subsp. *arenaria* (Waldst. & Kit. ex Willd.) Domin		EN	B2ab(iii)	EN	B2a(ii)b(iii)																		
Gypsophila paniculata L..	*Gypsophila paniculata* L..	M	LC		EN	B2a(ii)b(iii)				+						+								
Hackelia deflexa (Wahlenb.) Opiz	*Hackelia deflexa* (Wahlenb.) Opiz		VU	B2ab(iii,iv,v)	VU	B2a(i)b(iii,iv,v)																		
Hammarbia paludosa (L.) Kuntze	*Hammarbia paludosa* (L.) Kuntze		EN	C2a(i)										EN	B2ab(i,iii,iv)		CR	C2a(i)						
Hedysarum hedysaroides (L.) Schinz & Thell.	*Hedysarum hedysaroides* (L.) Schinz & Thell.		LC				+						+	CR	A4abcd				+					
Helianthemum alpestre subsp. *rupifragum* (A. Kern.) Jáv.	*Helianthemum alpestre* (Jacq.) Dunal subsp. *rupifragum* (A. Kern.) Jáv.		LC				+				VU	B2a							+					
Helictochloa compressa (Heuff.) Romero Zarco	*Helictotrichon compressum* (Heuff.) Henrard		VU	B2ab(iii)				VU	B2a; B2b(iii)										+					
Helictochloa planiculmis (Schrad.) Romero Zarco	*Avenula planiculmis* (Schrad.) W. Sauer & Chmelitschek var. *planiculmis*		NT				+				VU	D2; C				+			+					
Helictochloa pratensis subsp. *hirtifolia* (Podp.) Romero Zarco	*Avenula pratensis* subsp. *hirtifolia* (Podp.) Holub		VU	D1+2	VU	D1+D2(i,ii)																		
Helictotrichon desertorum subsp. *basalticum* (Podp.) Holub	*Helictotrichon desertorum* subsp. *basalticum* (Podp.) Holub		EN	B2ab(iii)																			EN	B2a(ii)b(iii)
Heliotropium europaeum L..	*Heliotropium europaeum* L..	A	LC		EN	B1a(i)b(iii)c(iv)				+									+			+		
Helleborus purpurascens Waldst. & Kit.	*Helleborus purpurascens* Waldst. & Kit.		LC				+			+	VU	A1a; B2a				+			+					
Helminthotheca echioides (L.) Holub	*Helminthotheca echioides* (L.) Holub	N	VU	B1ab(v)c(iv)	CR	B2a(ii)c(iv)													+					
Helosciadium nodiflorum (L.) W. D. J. Koch	*Apium nodiflorum* (L.) Lag.		RE														RE							
Helosciadium repens (Jacq.) W. D. J. Koch	*Apium repens* (Jacq.) Lag.		RE?														RE?							
Hepatica nobilis Schreb.	*Hepatica nobilis* Schreb.		LC				+	EN	A4c; B2ab (iii,iv); C2a(ii)				+			+			+			+		
Heracleum carpaticum Porcius	*Heracleum carpaticum* Porcius	E	CR	B1ac(iii)												+	CR	B1a; B1c(iii)						
Herminium monorchis (L.) R. Br	*Herminium monorchis* (L.) R. Br.		NT		CR	A2ac; B2a(i)b(iii,iv,v)c(iv); C2a(i)+C2b								EN	B2ab(iii,iv,v)				+					
Herniaria hirsuta L..	*Herniaria hirsuta* L..	A	VU	B1ab(i)	EN	B2a(i)b(iii)		RE											+			+		
Herniaria incana Lam.	*Herniaria incana* Lam.		NT		CR	B2a(ii)b(iii)		EN	B2a; B2b(iii)													+		
Hesperis matronalis subsp. *candida* (Schulzer, Kanitz & Knapp) Thell.	*Hesperis matronalis* L. subsp. *vrabelyiana* (Schur) Soó	E	EN	B2ab(i,ii,v)				EN	B2ab(i, ii, v)				+											
Hesperis slovaca (F. Dvořák) F. Dvořák	*Hesperis slovaca* (F. Dvořák) F. Dvořák	E	VU	B2ab(iii,iv,v)	VU	B2a(i)b(iii,iv,v)																		
Hieracium austrotatricum Szeląg	*Hieracium austrotatricum* Szeląg		VU	D2	VU	D2(i,ii)																		
Hieracium bifidum Hornem.	*Hieracium bifidum* Hornem. subsp. *stolanum* Zahn	M	RE?																	RE?				
Hieracium bupleuroides C. C. Gmel.	*Hieracium bupleuroides* C. C. Gmel.		LC				+	EN	C2a(i, ii)				+			+								
Hieracium jurassicum Griseb.	*Hieracium jurassicum* Griseb. subsp. *papyraceum* (Zahn) NN	M	RE?																	RE?				
Hieracium krizsnae Lengyel & Zahn	*Hieracium krizsnae* Lengyel & Zahn		EX?		EX?																			

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Hieracium mlinicae (Hruby & Zahn) Chrtek f. & Mráz	*Hieracium mlinicae* (Hruby & Zahn) Chrtek f. & Mráz	E	VU	D2	VU	D2(i,ii)							+											
Hieracium piliferum Hoppe	*Hieracium piliferum* Hoppe		VU	D1+2	VU	D1+D2(i,ii)					CR	D												
Hieracium piliferum subsp. *glanduliferum* (Hoppe) Zahn	*Hieracium glanduliferum* Hoppe		RE?		RE?																			
Hieracium racemosum subsp. *barbatum* (Froel.) Zahn	*Hieracium barbatum* Tausch		EN	B2ab(ii); C2a(i)							EN	B2a; C2a(i)												
Hieracium slovacum Chrtek f.	*Hieracium slovacum* Chrtek jun.	E	VU	D2	VU	D2(i,ii)																		
Hieracium sparsum subsp. *silesiacum* (E. Krause) Zahn	*Hieracium silesiacum* E. Krause		VU	D2	VU	D2(i)					CR	B2a; D												
Hieracium sparsum subsp. *vierhapperi* Zahn	*Hieracium vierhapperi* (Zahn) Szeląg		VU	D2	VU	D2(i,ii)							+											
Hierochloë australis (Schrad.) Roem. & Schult.	*Hierochloë australis* (Schrad.) Roem. & Schult.		EN	B2ab(iii)																			EN	B2a(ii)b(iii)
Himantoglossum adriaticum H. Baumann	*Himantoglossum adriaticum* H. Baumann	H	EN	B2ab(iii)c(iii,iv)	EN	B2a(i)b(iii)c(iii,iv)		RE																
Himantoglossum caprinum (M. Bieb.) Spreng.	*Himantoglossum caprinum* (M. Bieb.) Spreng.	B, H	VU	B1ab(iii)c(iii,iv)	CR	B2a(i)b(iii)c(iii,iv)		EN	B2b(iii); C2a(i)										+					
Hippocrepis comosa L.	*Hippocrepis comosa* L.		LC				+			+							VU	D1						
Hippocrepis emerus subsp. *emeroides* (Boiss. & Spruner) Lassen	*Coronilla emerus* L. subsp. *emeroides* (Boiss. Spruner) Hayek		VU	B2ac(iii)													VU	B2a; B2c(iii)						
Hippocrepis emerus (L.) Lassen subsp. *emerus*	*Hippocrepis emerus* (L.) Lassen subsp. *emerus*		VU	B1ab(iii)	EN	D													+					
Hippuris vulgaris L.	*Hippuris vulgaris* L.	M	CR	B1ab(i,iii)	RE						RE								+					
Hornungia petraea (L.) Rchb.	*Hornungia petraea* (L.) Rchb.		NT				+	RE									EN	B1a; B1c(iii)						
Hottonia palustris L.	*Hottonia palustris* L.		NT		EN	B2a(i,ii)b(iv)c(ii,iii,iv)		VU	A4ac				+			+			+					
Huperzia selago (L.) Schrank & Mart.	*Huperzia selago* (L.) Bernh.		LC				+	EN	C1; C2b				+	VU	A4abcd				+					
Hydrocotyle vulgaris L.	*Hydrocotyle vulgaris* L.		EN	B2ab(iii)	EN	B2a(i)b(iii)																		
Hydrocharis morsus-ranae L.	*Hydrocharis morsus-ranae* L.		VU	B1ab(i)	CR(PE)					+			+			+								
Hypericum elegans Willd.	*Hypericum elegans* Stephan ex Willd.		VU	B1ab(i,ii,v)				EN	B2ab(i, ii, v)										+					
Hypericum rochelii Griseb. & Schenk	*Hypericum rochelii* Griseb. & Schenk		EN	B2ac(iii)													EN	B2a; B2c(iii)		DD				
Hypericum umbellatum A. Kern.	*Hypericum umbellatum* A. Kern.		CR	B2ac(iii)													CR	B2a; B2c(iii)						
Hypochaeris glabra L.	*Hypochaeris glabra* L.		NT		RE						+			+					+					
Iris aphylla subsp. *hungarica* (Waldst. & Kit.) Hegi	*Iris aphylla* subsp. *hungarica* (Waldst. & Kit.) Hegi	H	NT		VU	B2a(i)b(ii,iii)c(iv)		VU	B1; C1							+			+					
Iris graminea L.	*Iris graminea* L.		NT				+			+	RE					+			+					
Iris graminea L.	*Iris pseudocyperus* Schur	M	NT							+				EN	B1ab(i,ii,iii,iv,v)									
Iris humilis Georgi		H	EN	D																				
	Iris humilis Georgi																EN	D						
	Iris arenaria W. & K.							CR	D1															
Iris pumila L.	*Iris pumila* L. subsp. *pumila*		LC				+			+									+	EN	B2c; E			
Iris reichenbachii Heuff.	*Iris reichenbachii* Heuff.		VU	B1ab(i)													CR	B2a; B2c(ii)				+		
Iris sibirica L.	*Iris sibirica* L.		NT		VU	A2ac; B1a(i)b(iii,iv,v)				+			+	VU	A3abcd				+					
Iris spuria L. subsp. *spuria*	*Iris spuria* L. subsp. *spuria*	M	VU	B1ab(iii)	CR	B1a(ii)b(iii)		EN	B2a; B2b(iii)										+					
Iris variegata L.	*Iris variegata* L.		LC		VU	B2a(ii)b(iii)				+						+			+			+		
Isatis praecox Tratt.	*Isatis praecox* Kit. ex Tratt.		NT		VU	B1a(i)b(iii); C2a(i); D2(i)				+									+					
Isatis tinctoria L.	*Isatis tinctoria* L.		NT				+	VU	A3c										+					
Isolepis setacea (L.) R. Br.	*Isolepis setacea* (L.) R. Br.		VU	A2ac; B2ab(iii,iv,v)	VU	A2ac; B2a(i)b(iii,iv,v)							+						+					
Jacobaea abrotanifolia subsp. *carpathica* (Herbich) B. Nord. & Greuter	*Senecio carpathicus* Herbich		LC				+						+	EN	B2ab(ii,iii)				+					
Jacobaea aquatica (Hill) G. Gaertn. & al.	*Senecio aquaticus* Hill		EN	B1ac(iv)				EN	B1ac(iv)								EN	B2a; B2c(iv); D						
Jacobaea erucifolia subsp. *tenuifolia* (J. Presl & K. Presl) B. Nord. & Greuter	*Jacobaea erucifolia* subsp. *tenuifolia* (J. Presl & K. Presl) B. Nord. & Greuter		NT		EN	A2ac; B2a(i)b(iii,iv,v)				+						+								
Jacobaea paludosa (L.) G. Gaertn. & al. subsp. *paludosa*	*Jacobaea paludosa* (L.) P. Gaertn., B. Mey. & Scherb. subsp. *paludosa*		EN	B2ab(i,ii)	CR	A2ac; B2a(ii)b(i,ii); D							+											
Jasione montana L.	*Jasione montana* L.		NT		VU	B1a(i)b(iii)				+			+			+			+					
Jovibarba globifera subsp. *hirta* (L.) J. Parn.	*Jovibarba hirta* (L.) Opiz		LC				+			+			+	EN	A4abcd				+					
Juncus acutiflorus Ehrh. ex Hoffm.	*Juncus acutiflorus* Ehrh. ex Hoffm.		VU	B1ab(iii)	CR	B2a(i)b(iii)										+			+					
Juncus castaneus Sm.	*Juncus castaneus* Sm.		EN	A2ac; B1ab(iii,iv,v)	CR	A2ac; B2a(i)b(iii,iv,v)										+			+					
Juncus gerardii Loisel. subsp. *gerardii*	*Juncus gerardii* Loisel. subsp. *gerardii*	M	NT		EN	B2a(ii)b(iii)				+						+			+					

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Juncus jacquinii L.	*Juncus atratus* Krock.		NT					EN	B2a; B2b(iii)							+			+			+		
Juncus minutulus (Albert & Jahand.) Prain	*Juncus minutulus* Krecz. & Gontsch.		DD														CR	B1a; B1c(ii); C2a(i)						
Juncus sphaerocarpus Nees	*Juncus sphaerocarpus* Nees		NT		CR	A2ac; B2a(ii)b(iii,iv,v)v(iv)		EN	B2a; B2c(iv)				+											
Juncus squarrosus L.	*Juncus squarrosus* L.		VU	A2ac; B2ab(iii,iv)	VU	A2ac; B2a(i)b(iii,iv)							+											
Juncus subnodulosus Schrank	*Juncus subnodulosus* Schrank		EN	B1ab(i)	CR	B2a(ii)b(iii)										+			+					
Juncus thomasii Ten.	*Juncus thomasii* Ten.		NT		RE											+			+					
Juncus triglumis L.	*Juncus triglumis* L.		NT		VU	D2(i)					CR	B2a				+			+					
Juniperus sabina L.	*Juniperus sabina* L.		NT		EN	B2a(ii)b(iii,v)					EN	B2a				+			+	EN	B2b,c,d; E			
Klasea lycopifolia (Vill.) Á. Löve & D. Löve	*Serratula lycopifolia* (Vill.) A. Kern.	H*	EN	A2ac; B2ab(iii)c(iv)	CR	A2ac; B2a(ii)b(iii)c(iv); C2a(i); D		CR	A2ac; C2a(ii)															
Klasea radiata (Waldst. & Kit.) Á. Löve & D. Löve	*Serratula radiata* (Waldst. & Kit.) M. Bieb.		EN	B2ab(ii,iii)				EN	B2ab(ii,iii)															
Knautia dipsacifolia Kreutzer	*Knautia dipsacifolia* Kreutzer		NT				+	CR	A2ac; B2ab (v); C2a(i); D				+			+			+					
Kobresia myosuroides (Vill.) Fiori	*Elyna myosuroides* (Vill.) Fritsch		NT		VU	D2(i,ii)													+					
Kobresia simpliciuscula (Wahlenb.) Mack.	*Kobresia simpliciuscula* (Wahlenb.) Mack.		VU	B1ac(i)	VU	D2(i)											CR	B2a; B2c(ii)						
Laburnum alpinum (Mill.) Bercht. & J. Presl	*Laburnum alpinum* (Mill.) Berchtold & J. Presl		RE?														RE?							
Laburnum anagyroides Medik.	*Laburnum anagyroides* Medik.	M, N	NT													+			+	EN	A1c; B1;B2c; C2a			
Lactuca saligna L.	*Lactuca saligna* L.	A	LC		VU	A2ac; B2a(ii)b(i,iii,iv)				+												+		
Laphangium luteoalbum (L.) Tzvelev	*Pseudognaphalium luteoalbum* (L.) Hilliard & B. L. Burtt		VU	B1ab(i,iii)	CR	B2a(ii)b(i,ii,iii)				+			+						+					
Lappula heteracantha subsp. *heterocarpa* (Klokov & Artemczuk) Holub	*Lappula heteracantha* subsp. *heterocarpa* (Klokov & Artemczuk) Holub	M	NT		EN	A2ac; B2a(i,ii)b(ii,iii,iv,v)				+						+								
Larix decidua var. *polonica* (Wóycicki) Ostenf. & Syrach	*Larix polonica* Racib.		NT										+	CR	B1ac(i,ii,iii,iv)				+					
Laserpitium archangelica Wulfen	*Laserpitium archangelica* Wulfen		NT				+				EN	B2a; D							+					
Laserpitium prutenicum L.	*Laserpitium pruthenicum* L.		NT				+	VU	B2b(i,iii,iv)				+			+			+					
Lathyrus aphaca L.	*Lathyrus aphaca* L.	M, N	NT		CR(PE)					+									+			+		
Lathyrus laevigatus (Waldst. & Kit.) Gren.			NT																					
	Lathyrus laevigatus (Waldst. & Kit.) Fritsch												+	EN	A4bc				+					
	Lathyrus laevigatus (Waldst. & Kit.) Gren.				VU	B2a(i)b(iii)																		
Lathyrus pallescens (M. Bieb.) K. Koch	*Lathyrus pallescens* (M. Bieb.) K. Koch		EN	B1ab(i)				CR	A3c; C2a(ii)										+			+		
Lathyrus palustris L.	*Lathyrus palustris* L.		NT		EN	B1a(i)b(iii)				+						+			+					
Lathyrus pannonicus subsp. *collinus* (J. Ortmann) Soó	*Lathyrus lacteus* (M. Bieb.) Wissjul.		NT		VU	B1a(i)b(iii)				+														
Lathyrus pannonicus (Jacq.) Garcke	*Lathyrus pannonicus* (Jacq.) Garcke	M	EN	B1ab(i)	CR	B2a(i)b(iii,iv)										+			+					
Lathyrus pisiformis L.	*Lathyrus pisiformis* L.		EN	B1ab(i,iii)	CR	B2a(i)c(iv); C2a(i); D		EN	B2ab(i,ii,iii)															
Lathyrus sphaericus Retz.	*Lathyrus sphaericus* Retz.	M	VU	B2ab(i,iii,iv)	RE			VU	B2b(i,iii,iv)															
Lathyrus transsilvanicus (Spreng.) Fritsch		E	NT																					
	Lathyrus transsilvanicus (Spreng.) Fritsch				VU	A2ac; B2a(ii)b(i,ii,iii,iv,v); C2a(i)		EN	A2ac; B2ab (iii,v); C2a(ii)										+					
	Lathyrus transsilvanicus (Spreng.) Rchb.													CR	A2abc									
Lathyrus venetus (Mill.) Wohlf.	*Lathyrus venetus* (Mill.) Wohlf.		LC		VU	D1+D2(i,ii)													+					
Legousia speculum-veneris (L.) Chaix	*Legousia speculum-veneris* (L.) Chaix	A, N	CR	B1ab(i)	RE														+					
Leontopodium alpinum Cass.	*Leontopodium alpinum* Cass.		NT				+						+	CR	A4abcd				+					
Leucanthemella serotina (L.) Tzvelev	*Leucanthemella serotina* (L.) Tzvelev	M	VU	B2ab(i,ii,iii,iv)				VU	B2ab(i, ii, iii, iv)															
Leucojum aestivum L.	*Leucojum aestivum* L.	M	VU	B1ab(iv)	CR	B2a(iv)b(ii)		VU	B2a; B2b(iv)					EN	A1abcd				+					
Leucojum vernum L.	*Leucojum vernum* L.		NT				+						+	VU	A4abcd				+	EN	B1 ab; B2ab			
Ligularia carpathica (Schott) Pojark.	*Ligularia carpathica* (Schott) Pojark.		NT		EN	B2a(ii)b(ii,iii)c(iv)							+			+			+					
Ligularia sibirica (L.) Cass.	*Ligularia sibirica* (L.) Cass.	B, H	NT		VU	B2a(ii)b(iii,iv,v)					CR	B2a; D		CR	B1ab(i,ii,iii,iv,v)				+					
Lilium bulbiferum L.	*Lilium bulbiferum* L.		NT				+	CR	B2a; B2b(iii) C2a(i)		CR	B2a;				+			+					
Lilium jankae A. Kern.		B	VU	C2a(i)																				
	Lilium carniolicum Bernh. subsp. *jankae* (A. Kerner) Ascherson & Graebner																VU	C2a(i)						
	Lilium jankae A. Kern.																			DD				

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Lilium martagon L.	*Lilium martagon* L.		LC				+			+			+	VU	Aabcd				+	LC				
Linaria alpina (L.) Mill.	*Linaria alpina* (L.) Mill.		VU	C2a(i)	CR	D											VU	C2a(i)						
Linaria angustissima (Loisel.) Borbás		M	NT																					
	Linaria pallidiflora (Lam.) Valdés				VU	B1a(i)b(iii,iv,v)				+						+			+					
	Linaria angustissima (Loisel.) Borbás subsp. *strictissima*																			DD				
Linaria arvensis (L.) Desf.	*Linaria arvensis* (L.) Desf.	A	RE		RE																			
Lindernia procumbens (Krock.) Philcox	*Lindernia procumbens* (Krock.) Philcox	B, M, N	NT		VU	D2(i,ii)		VU	C2a(ii); C2b							+			+					
Linnaea borealis L.			EN	B1ab(iv); C2a(i)																				
	Linnaea borealis L.				EN	B2a(ii)b(i,ii,iv)								CR	B2ab(iii,iv)				+					
	Linnaea borealis L. subsp. *borealis*										CR	C2a(i)												
Linum hirsutum subsp. *glabrescens* (Rochel) Soó	*Linum hirsutum* subsp. *glabrescens* (Rochel) Soó		EN	B2ab(ii,iii,iv)c(ii,iii)	EN	B2a(i,ii)b(ii,iii,iv)c(ii,iii)																		
Linum trigynum L.	*Linum trigynum* L.	A	VU	B1ab(i)	CR	A2ac; B1a(i,ii)b(ii,iii,iv,v)c(iv)		RE								+			+					
Liparis loeselii (L.) Rich.	*Liparis loeselii* (L.) Rich.	B, H	VU	B1ab(iii)c(iv)	CR	B2a(ii)b(iii)c(iv); C2a(ii)							+	DD					+					
Lloydia serotina (L.) Rchb	*Lloydia serotina* (L.) Rchb		LC				+						+	CR	B1ab(i,ii,iii,iv)				+					
Loiseleuria procumbens (L.) Desv.	*Loiseleuria procumbens* (L.) Desv.		NT		EN	B2a(ii)b(ii,iii,iv,v)								VU	A2abcd				+					
Lolium remotum Schrank	*Lolium remotum* Schrank	A	CR	B1ab(i,iii)	RE														+					
Lolium temulentum L.	*Lolium temulentum* L. subsp. *temulentum*	A, M	NT		CR	A2ac; B2a(i,ii)b(iii,iv); C2a(ii)		RE					+			+			+					
Lonicera alpigena L.	*Lonicera alpigena* L.		VU	B1ab(i)	VU	D2(i,ii)													+					
Lonicera caerulea L.	*Lonicera caerulea* L.		VU	B1ab(iv)										CR	B2ab(i,ii,iii)		VU	C1b						
Lonicera nigra L.	*Lonicera nigra* L.		LC				+	CR	B2a; D1				+			+			+			+		
Lotus borbasii Ujhelyi	*Lotus borbasii* Ujhelyi		NT		EN	B1a(i)b(iii)		VU	B2b(i,ii)															
Lotus maritimus L.	*Tetragonolobus maritimus* (L.) Roth		NT		EN	B1a(i)b(iii)				+			+			+								
Lotus pedunculatus Cav.	*Lotus uliginosus* Schkuhr		NT		EN	B1a(i)b(iii)							+			+								
Ludwigia palustris (L.) Elliott	*Ludwigia palustris* (L.) Elliott		DD											DD					+					
Lycopodiella inundata (L.) Holub	*Lycopodiella inundata* (L.) Holub		EN	A2ac; B1ab(iii,iv,v)	CR	A2ac; B1a(i)b(iii,iv,v)							+	CR	B2ab(ii,iii)				+					
Lycopodium alpinum L.	*Diphasiastrum alpinum* (L.) Holub		NT				+						+	VU	A4abcd				+					
Lycopodium annotinum L.	*Lycopodium annotinum* L.		LC		LC		+	EN	C2a(i)				+	VU	A1abcd				+					
Lycopodium clavatum L.	*Lycopodium clavatum* L.		LC				+	VU	B2a; B2c(iv)				+			+			+	EN	B2b,c,d,e			
Lycopodium complanatum L.			NT																					
	Diphasiastrum complanatum (L.) Holub				VU	B2a(i)b(iii)							+	DD					+					
	Diphasium complanatum (L.) Rothm.							VU	B2b(iii, iv)															
Lycopodium issleri (Rouy) Domin	*Diphasiastrum issleri* (Rouy) Holub		CR	C2a(i)	RE			RE			CR	C2a(i)		CR	B2ab(ii,iii,iv)									
Lycopodium zeilleri (Rouy) Greuter & Burdet	*Diphasiastrum zeilleri* (Rouy) Holub		VU	B2ab(ii)							VU	B2a												
Lysimachia nemorum L.	*Lysimachia nemorum* L.		LC				+						+			+	CR	C2b						
Lysimachia thyrsiflora L.	*Lysimachia thyrsiflora* L.		NT		EN	B2a(ii)b(iii,iv,v)		RE					+				VU	B2a; B2c(ii)						
Malaxis monophyllos (L.) Sw.	*Malaxis monophyllos* (L.) Sw.		LC		NT						EN	C2a(i); D		EN	C2a(i)				+					
Malcolmia orsiniana (Ten.) Ten.	*Malcolmia orsiniana* (Ten.) Ten. subsp. *serbica* (Pančić) Greuter & Burdet	M	VU	B2ab(ii)																VU	B1			
Marrubium vulgare L.	*Marrubium vulgare* L.	A	NT		VU	A2ad; B2a(ii)b(ii,iv)				+			+			+			+			+		
Medicago monspeliaca (L.) Trautv.	*Medicago monspeliaca* (L.) Trautv.	M	VU	B1ab(iii)	EN	B1a(i)b(iii)				+														
Medicago prostrata Jacq.	*Medicago prostrata* Jacq.		NT		VU	B1a(i)b(iii)				+									+					
Medicago rigidula (L.) All.	*Medicago rigidula* (L.) All.	M, N	NT		CR	B1a(i)b(iii)		EN	B2ab(i, ii, iv)										+					
Melampyrum barbatum Waldst. & Kit. ex Willd. subsp. *barbatum*	*Melampyrum barbatum* Waldst. & Kit. ex Willd. subsp. *barbatum*	N	NT		VU	A2ac; B2a(i)b(ii,iii,iv,v)c(iv)				+									+			+		
Melampyrum herbichii Wol.	*Melampyrum herbichii* Wol.	E	NT		VU	A2cc; B2a(i,ii)b(iii)							+			+			+					
Melampyrum saxosum Baumg.	*Melampyrum saxosum* Baumg.	E	NT								VU	B2a				+			+					
Melica altissima L.	*Melica altissima* L.	N	LC		CR	B1a(i)b(iii)				+									+					
Melilotus altissimus Thuill.	*Melilotus altissimus* Thuill.	M	VU	A2acd; B2ab(i,ii,iii)	VU	A2acd; B2a(ii)b(i,ii,iii)				+			+						+					
Menyanthes trifoliata L.	*Menyanthes trifoliata* L.		LC				+	VU	B2b(i,ii)				+			+			+					
Minuartia glaucina Dvořáková	*Minuartia glaucina* Dvořáková		NT		VU	A2ac; B2b(ii,iii)				+														
Minuartia glomerata (M. Bieb.) Degen subsp. *pannonica* Letz	*Minuartia glomerata* (M. Bieb.) Degen subsp. *pannonica* Letz		VU	B1ab(iii)	CR	B2a(ii)b(iii)				+									+					
Minuartia hirsuta subsp. *frutescens* (Kit.) Hand.-Mazz.	*Minuartia frutescens* (Kit. ex Schult.) Tuzson ex Degen		NT		VU	A2ace; B2a(i)b(iii,v); C2a(i)				+									+					
Minuartia laricifolia subsp. *kitaibelii* (Nyman) Mattf.	*Minuartia laricifolia* (L.) Schinz & Thell. subsp. *kitaibelii* (Nyman) Mattf.		LC				+						+				CR	C1a(i)						

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Minuartia setacea (Thuill.) Hayek	*Minuartia setacea* (Thuill.) Hayek		NT				+			+	CR	A2a; B2a							+					
Minuartia verna (L.) Hiern subsp. *verna*	*Minuartia pauciflora* (Kit. ex Kanitz) Dvořaková	E	NT				+						+	CR	A4abc				+			+		
Minuartia verna subsp. *oxypetala* (Woll.) G. Halliday	*Minuartia oxypetala* (Wol.) Kulcz.	E	EN	A2ac										CR	A3bc				+					
Minuartia viscosa (Schreb.) Schinz & Thell.	*Minuartia viscosa* (Schreb.) Schinz & Thell.	M	EN	B1ab(i)	RE					+														
Moehringia muscosa L.	*Moehringia muscosa* L.		LC				+	VU	A4ac; C2a(i)				+			+			+			+		
Moenchia mantica (L.) Bartl. subsp. *mantica*	*Moenchia mantica* (L.) Bartl. subsp. *mantica*	M, N	LC		RE					+									+			+		
Moneses uniflora (L.) A. Gray	*Moneses uniflora* (L.) A. Gray		LC				+	VU	A4acd; C2a(i)				+			+			+					
Montia arvensis Wallr.	*Montia arvensis* Wallr.		CR(PE)		CR(PE)																			
Montia fontana L.	*Montia fontana* L.		VU	A2ac; B1ab(iii)c(iii,iv)	CR	A2ac; B2a(i)b(iii)c(iii,iv)							+						+					
Muscari botryoides (L.) Mill.	*Muscari botryoides* (L.) Mill.	A	LC				+			+				EN	A1abcd				+			+		
Myosotis discolor Pers.			NT																					
	Myosotis discolor Pers. subsp. *discolor*				VU	A2ac; B2a(i)b(i,ii,iii,iv,v)							+											
	Myosotis discolor Pers.																EN	B1a; B1c(iv)						
Myosotis laxa subsp. *caespitosa* (Schultz) Nordh.	*Myosotis caespitosa* Schultz		NT		EN	A2ac; B2a(i,ii)b(iii,iv,v)		VU	B2a(i,ii)b(iii,iv,v)							+			+					
Myosotis stenophylla Knaf	*Myosotis stenophylla* Knaf		NT		VU	B2a(i,ii)b(ii,iii,iv,v)c(iv); C2a(i)b(iv)										+			+					
Myricaria germanica (L.) Desv.	*Myricaria germanica* (L.) Desv.		NT		VU	A1ac; B1a(i)b(ii,iii,iv,v)		CR	D1				+			+			+					
Myriophyllum verticillatum L.	*Myriophyllum verticillatum* L.		NT		VU	B2a(i,ii)c(iii,iv)				+			+			+			+			+		
Narcissus poeticus subsp. *radiiflorus* (Salisb.) Baker	*Narcissus angustifolius* Curtis	B	VU	A4abcd										VU	A4abcd				+					
Nasturtium officinale (L.) R. Br.	*Nasturtium officinale* R. Br.		LC		CR	B2a(ii)b(iii)c(iii,iv)				+			+			+			+					
Neotinea ustulata (L.) R. M. Bateman, Pridgeon & M. W. Chase			NT																					
	Orchis ustulata L.							VU	B2a; B2b(iii)		CR	C2a(i)							+	LC				
	Neotinea ustulata (L.) R. M. Bateman, Pridgeon & M. W. Chase													EN	A2abcd									
	Neotinea ustulata (L.) R. M. Bateman, Pridgeon & M. W. Chase subsp. *ustulata*				EN	B2a(i)b(iii)c(iv)																		
Neottia cordata (L.) Rich	*Listera cordata* (L.) R. Br		NT				+			+			+	CR	A4abc				+					
Neottia nidus-avis (L.) Rich.	*Neottia nidus-avis* (L.) Rich.		LC				+			+			+	VU	A2abcd				+	LC				
Neottia ovata (L.) Bluff & Fingerh.	*Listera ovata* (L.) R. Br		LC				+			+			+	VU	A2abcd				+	LC				
Nepeta rtanjensis Diklic & Milojevic	*Nepeta rtanjensis* Diklić & Milojević		CR	B2ac(ii,iii)																CR	B2c			
Noccaea banatica (R. Uechtr.) F. K. Mey.	*Thlaspi dacicum* Heuff. subsp. *banaticum* (R. Uechtr.) Jáv.	E	NT														VU	B2a; B2c(iii)						
Noccaea jankae (A. Kern.) F. K. Mey.	*Thlaspi jankae* A. Kern.	B, E, H	NT		VU	B2a(i)b(iii)				+									+					
Noccaea kovatsii (Heuff.) F. K. Mey.	*Thlaspi kovatsii* Heuff. subsp. *schudichii* (Soó) Soó		LC					CR	B2ab(i, ii, iii, v)										+					
Noccaea montana (L.) F. K. Mey.	*Thlaspi montanum* L.		EN	B2ab(iii,iv,v)	EN	B2a(i)b(iii,iv,v)																		
Nuphar lutea (L.) Sm.	*Nuphar lutea* (L.) Sm.	M	NT		EN	A2acd				+			+			+						+		
Nymphaea alba L.	*Nymphaea alba* L.	M	NT		RE					+			+			+						+		
Odontites vernus (Bellardi) Dumort.	*Odontites verna* (Bellardi) Dumort.		DD		CR(PE)								+			+			+					
Oenanthe banatica Heuff.	*Oenanthe banatica* Heuff.	M	NT		EN	A2ac; B2a(i,ii)b(iii); D		VU	B2b(i,ii)							+			+					
Oenanthe fistulosa L.	*Oenanthe fistulosa* L.		NT				+	VU	B2b(i,ii)										+					
Oenanthe silaifolia M. Bieb.	*Oenanthe silaifolia* M. Bieb. subsp. *silaifolia*	M	NT		CR(PE)					+						+			+					
Omphalodes scorpioides (Haenke) Schrank	*Omphalodes scorpioides* (Haenke) Schrank		NT				+	VU	A4acd				+			+			+					
Onobrychis montana DC.	*Onobrychis montana* DC.		NT		VU	D2(i)					VU	D2; C							+					
Onoclea struthiopteris (L.) Roth	*Matteuccia struthiopteris* (L.) Tod.		LC				+	VU	D2				+			+			+					
Ononis pusilla L.	*Ononis pusilla* L.	M	NT		CR	A2ace; B2a(ii)b(iii,iv)				+														
Onosma arenaria Waldst. & Kit.	*Onosma arenaria* Waldst. & Kit.		CR	B2ab(ii,iii); D	CR	B2a(i)b(ii,iii); D																		
Onosma pseudoarenaria Schur subsp. *pseudoarenaria*	*Onosma arenaria* Waldst. & Kit. subsp. *pseudoarenaria* (Schur) Jáv.		VU	C2a(i)													VU	C2a(i)						
Onosma pseudoarenaria subsp. *tuberculata* (Kit.) Rauschert	*Onosma pseudoarenaria* subsp. *tuberculata* (Kit.) Rauschert		VU	B1ab(i,iii); C2a(i)	CR	B2a(i)b(ii,iii)		VU	A4acd; C2a(i)															
Onosma tornensis Jáv.	*Onosma tornensis* Jáv.	B, E, H*	EN	B1ab(iii)	CR	B2a(i)b(ii,iii)		EN	B2ab(iii)															

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Onosma visianii Clementi	*Onosma visianii* Clementi		VU	B1ab(iii,iv,v)	VU	B2a(i)b(iii,iv,v)		EN	A2ac; B2ab (i,ii,iii,iv)													+		
Ophrys apifera Huds.	*Ophrys apifera* Huds.		NT		VU	B1a(i)b(iii,iv,v)c(iv)		CR	B2b(v); B2c(iv); C2a(i)										+					
Ophrys apifera Huds.			EN	B1ab(iii,v)c(iv)																				
	Ophrys holosericea (Burm. f.) Greuter				CR	B2a(i)b(iii)c(iv)																		
	Ophrys holosericea Burm. f.																CR	A2; B2a; B2b(v)						
Ophrys fuciflora (F. W. Schmidt) Moench subsp. *fuciflora*	*Ophrys fuciflora* (F. W. Schmidt) Moench		CR	A2; B2ab(v)													CR	A2; B2a; B2b(v)						
Ophrys holosericea subsp. *holubyana* (András.) Dostál	*Ophrys holubyana* András.		VU	A2ac; B1ab(iii,iv,v)c(iv)	VU	A2ac; B1a(i)b(iii,iv,v)c(iv)																		
Ophrys insectifera L.			LC																					
	Ophrys insectifera L.				NT		+	CR	B2a; C2a(i)		EN	C2a(i)		DD										
	Ophrys muscifera Hudson																CR	C2a(i)						
Ophrys scolopax subsp. *cornuta* (Steven) E. G. Camus	*Ophrys cornuta* Steven		CR	C2a(i)													CR	C2a(i)						
Ophrys sphegodes Mill.			EN	B1ab(iii)c(iv)																				
	Ophrys aranifera Huds.																CR	C2a(i)						
	Ophrys sphegodes Mill.				CR	B2a(i)b(iii)c(iv); D		CR	B2a; C2a(i)															
Orchis mascula (L.) L. subsp. *mascula*	*Orchis mascula* (L.) L.		VU	B2ab(i,ii,iii,iv,v)										VU	B2ab(i,ii,iii,iv,v)							+		
Orchis mascula subsp. *speciosa* (Mutel) Hegi			LC																					
	Orchis mascula L. subsp. *signifera* (Vest) Soó						+	VU	B2a; B2c(iv)				+									+		
	Orchis signifera Vest													EN	A1abcd									
Orchis militaris L.	*Orchis militaris* L.		LC		NT					+	CR	B2a; D		VU	A2abcd				+			+		
Orchis pallens L.	*Orchis pallens* L.		LC		NT					+	VU	A2a; C2a(i)		CR	C2b				+					
Orchis purpurea Huds.	*Orchis purpurea* Huds.		LC		NT					+	EN	B2a; C2a(i)		CR	A3bc				+			+		
Orchis simia Lam.	*Orchis simia* Lam.		VU	B1ac(i,iv)				CR	B2a; B2c(iv); D1										+			+		
Orchis spitzelii W. D. J. Koch	*Orchis spitzelii* W. D. J. Koch		EN	D	EN	D																		
Oreochloa disticha (Wulfen) Link	*Oreochloa disticha* (Wulfen) Link		LC				+						+	CR	C2a(ii)				+					
Ornithogalum comosum L.	*Ornithogalum comosum* Torn.		EN	B1ab(i)	RE					+									+			+		
Ornithogalum sphaerocarpum A. Kern.			VU	A2ac; B1ab(i,iii,iv,v)c(iv)																				
	Ornithogalum pyrenaicum subsp. *sphaerocarpum* (A. Kern.) Hegi				CR	A2ac; B2a(ii)b(i,iii,iv,v); C1+C2a(ii)																			
	Ornithogalum sphaerocarpum A. Kern.							VU	B2a; B2c(iv)										+					
Orobanche alba Willd.	*Orobanche alba* Stephan ex Willd.		NT				+			+	VU	D2				+			+			+		
Orobanche alsatica Kirschl.	*Orobanche alsatica* Kirschl.		NT		VU	B2a(i)b(iii,iv,v)				+						+			+					
Orobanche alsatica Kirschl.			NT																					
	Orobanche mayeri (Suess. & Ronniger) Bertsch				VU	B1a(i,ii)b(iii,iv,v)																			
	Orobanche mayeri (Suess. & Ronniger) Bertsch & F. Bertsch										CR	C2a(i)b; D												
Orobanche arenaria Borkh.	*Phelipanche arenaria* (Borkh.) Pomel		NT		EN	B2a(i)b(iii,iv,v); C2a(i)				+														
Orobanche artemisiae-campestris Gaudin	*Orobanche artemisiae-campestris* Vaucher ex Gaudin	M	EN	B1ab(iii)	CR	B2a(i,ii)b(iii); D													+					
Orobanche artemisiae-campestris Gaudin			VU	B1ab(iii,iv,v); C2(b)																				
	Orobanche picridis F. W. Schultz ex W. D. J. Koch							VU	B2b(iii, iv)															
	Orobanche picridis F. W. Schultz				VU	B2a(i,ii)b(iii,iv,v)					CR	B2a; C2a(i)b												
Orobanche cernua Loefl.	*Orobanche cernua* L. in Loefl.		CR	D				CR	D1															
Orobanche coerulescens Stephan	*Orobanche coerulescens* Stephan	M	EN	B1ab(iii,iv)	CR	B2a(i)b(iii,iv)		RE											+					
Orobanche elatior Sutton (sensu orig.)			NT																					
	Orobanche elatior Sutton										EN	B2a; C2a(i)				+								
	Orobanche elatior Sutton (sensu orig.)				CR	B2a(i,ii)b(iii); D				+														
Orobanche flava F. W. Schultz	*Orobanche flava* Mart.		LC				+	VU	D2				+			+			+					
Orobanche gracilis Sm.	*Orobanche gracilis* Sm.	M	VU	B1ab(iii,iv,v)	VU	B1a(i)b(iii,iv,v)										+			+			+		
Orobanche teucrii Holandre	*Orobanche teucrii* Holandre	M	DD		EN	B2a(i,ii)b(iii); D				+						+			+					

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Osmunda regalis L.	*Osmunda regalis* L.		RE?														RE?							
Oxyria digyna (L.) Hill	*Oxyria digyna* (L.) Hill		LC				+						+	EN	B2ab(ii,iii)				+					
Oxytropis campestris (L.) DC. subsp. *campestris*			NT																					
	Oxytropis campestris (L.) DC. subsp. *tatrae* (Borbás)										VU	B2a							+					
	Oxytropis campestris subsp. *tatrae* (Borbás) Dostál	E			VU	D2(i)																		
Oxytropis carpatica R. Uechtr.	*Oxytropis carpatica* R. Uechtr.	E	NT				+				VU	C2a(i)				+			+					
Oxytropis halleri W. D. J. Koch	*Oxytropis halleri* Bunge		NT				+				VU	C2a(i)							+					
Oxytropis neglecta Ten.	*Oxytropis neglecta* Ten.		CR	B1ac(i)													CR	B1a; B1c(i)						
Oxytropis pilosa (L.) DC.	*Oxytropis pilosa* (L.) De Cand.		VU	B1ab(iii)				EN	D1										+	EN	B2b,c; C1			
Paeonia daurica Andrews	*Paeonia corallina* Retz.		EN	B2ab(ii,iii)																EN	B2b,c,d			
Paeonia tenuifolia L.	*Paeonia tenuifolia* L.	B	CR	A3cd				CR	A3cd															
Papaver argemone L.	*Papaver argemone* L.	A	NT		CR	A2ac				+			+						+					
Papaver dubium subsp. *confine* (Jord.) Hörandl	*Papaver confine* Jord.		DD		VU	A2ce; B2(ii)b(i,iii,iv)c(iii)				+														
Papaver dubium L. subsp. *dubium*	*Papaver dubium* L. subsp. *dubium*	A	NT		CR	B2a(i)b(i,ii,iv); D							+						+			+		
Papaver tatricum (A. Nyár.) Ehrend.	*Papaver tatricum* (A. Nyár.) Ehrend. subsp. *tatricum*	E	NT				+				VU	B2a; C2a(i)												
Papaver tatricum (A. Nyár.) Ehrend.	*Papaver tatricum* subsp. *fatraemagnae* Bernátová	E	EN	B2ab(iii,iv,v)c(iii,iv); C2a(i)	EN	B2a(i,ii)b(iii,iv,v)c(iii,iv); C2a(i)																		
Parnassia palustris L.	*Parnassia palustris* L.		LC				+	VU	B2ab(i,ii,iii,iv)				+			+			+					
Paronychia cephalotes (M. Bieb.) Besser	*Paronychia cephalotes* (M. Bieb.) Bess.		NT					VU	B2ab(iii, iv)										+					
Pastinaca hirsuta Pančić	*Pastinaca hirsuta* Pančić	M	VU	B1ab(ii,iii)																VU	B1			
Pedicularis baumgartenii Simonk.	*Pedicularis baumgartenii* Simonk.	E	CR	B1ac(iii)													CR	B1a; B1c(iii)						
Pedicularis comosa L. subsp. *comosa*	*Pedicularis comosa* L. subsp. *comosa*		VU	B1ab(iii)	CR	C2a(i)										+			+			+		
Pedicularis hacquetii Graf	*Pedicularis hacquetii* Graf		NT		NT		+				VU	B2a				+			+					
Pedicularis kaufmannii Pinzger	*Pedicularis kaufmannii* Pinzger		CR	B2a; C2a(i); D							CR	B2a; C2a(i); D												
Pedicularis oederi Vahl	*Pedicularis oederi* Vahl		NT		LC		+						+	CR	C1				+					
Pedicularis sceptrum-carolinum L.	*Pedicularis sceptrum-carolinum* L.		VU	A2ac; B1ab(iii,iv,v)	EN	A2ac; B2a(i)b(iii,iv,v)					RE					+	CR	C2b						
Pedicularis sylvatica L.			NT																					
	Pedicularis sylvatica L.													EN	B1ab(i,ii,iii,iv,v)		CR	C2a(i); C2b						
	Pedicularis sylvatica L. subsp. *sylvatica*				VU	B2a(i)b(i,iii,iv)							+											
Petrocallis pyrenaica (L.) R. Br.	*Petrocallis pyrenaica* (L.) W. T. Aiton		VU	D2	VU	D2(i)													+					
Petrorhagia saxifraga (L.) Link	*Petrorhagia saxifraga* (L.) Link		NT		VU	B2a(ii)b(iii,iv)							+						+			+		
Peucedanum arenarium Waldst. & Kit. subsp. *arenarium*	*Peucedanum arenarium* Waldst. & Kit.	M	CR	A2ad; B2ab(iii); C2a(ii)	CR	A2ad; B2a(ii)b(iii); C2a(ii)		RE																
Phegopteris connectilis (Michx.) Watt	*Phegopteris connectilis* (Michx.) Watt		LC				+	VU	B2a; B2c(iv)				+			+			+					
Phyteuma orbiculare L.	*Phyteuma orbiculare* L.		LC				+	VU	B2ab(iii)				+			+			+					
Pilosella echioides (Lumn.) . F. W. Schultz & Sch. Bip	*Pilosella echioides* (Lumn.) F. W. Schultz & Sch. Bip.	M	NT		VU	D2(i,ii)				+									+					
Pilosella euchaetia (Nägeli & Peter) Soják	*Pilosella euchaetia* (Nägeli & Peter) Soják		VU	B1ab(iii)																			VU	B1a(ii)b(iii)
Pilosella fallacina (F. W. Schultz) F. W. Schultz	*Pilosella fallacina* (F. W. Schultz) F. W. Schultz		VU	B1ab(iii)						+													VU	B1a(ii)b(iii)
Pilosella guthnickiana (Hegetschw.) Soják	*Pilosella guthnickiana* (Hegetschw.) Soják		VU	D2	VU	D2(i,ii)													+					
Pilosella iserana (R. Uechtr.) Soják	*Pilosella callimorpha* (Nägeli & Peter) Soják		RE?																				RE?	
Pilosella pilosellina (F. W. Schultz) Soják	*Pilosella pilosellina* (F. W. Schultz) Soják		CR	B1b(iii)c(iii)																			CR	B1b(iii)c(iii)
Pilosella rothiana (Wallr.) F. W. Schultz & Sch. Bip.	*Pilosella rothiana* (Wallr.) F. W. Schultz & Sch. Bip.		VU	D2	VU	D2(i,ii)													+					
Pilosella stenosoma (Nägeli & Peter) Soják	*Pilosella stenosoma* (Nägeli & Peter) Soják		RE?																				RE?	
Pinguicula alpina L.	*Pinguicula alpina* L.		LC		NT		+						+	VU	A4abc				+					
Pinguicula vulgaris L.			NT																					
	Pinguicula vulgaris L.				NT		+							VU	A4abc				+					
	Pinguicula vulgaris L. subsp. *bicolor* (Wol.) Á. Löve & D. Löve										CR	B2a												
Pinus cembra L.	*Pinus cembra* L.		NT		NT		+						+	EN	B1ab(i,ii,iii,iv,v)				+					
Pinus nigra Arn. subsp. *pallasiana* (Lamb.) Holmboe	*Pinus nigra* Arn. subsp. *pallasiana* (Lamb.) Holmboe		DD																+	EN	A1c,d,e; B1;B2c,d			
Pistorinia hispanica (L.) DC.	*Sedum antiquum* Omelcz. & Zaverucha		NT							+				CR	A4abcd				+					

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Pisum sativum L. subsp. *elatius* (M. Bieb.) Asch. & Graebn.	*Pisum sativum* L. subsp. *elatius* (M. Bieb.) Asch. & Graebn.		NT					VU	D2								CR	C2b						
Plantago arenaria Waldst. & Kit.	*Plantago arenaria* Waldst. & Kit.	M, N	NT		CR(PE)					+			+			+								
Plantago argentea Chaix	*Plantago argentea* Chaix		NT					VU	D2										+			+		
Plantago atrata subsp. *carpatica* (Soó) Soó	*Plantago atrata* Hoppe subsp. *carpatica* (Soó) Soó	E	NT				+				VU	B2a; C2a(i)				+			+					
Plantago maritima subsp. *ciliata* Printz	*Plantago maritima* subsp. *salsa* (Pall.) Soják	M	EN	B2ab(iii,iv,v)	EN	B2a(i)b(iii,iv,v)				+														
Plantago maxima Jacq.	*Plantago maxima* Juss. ex Jacq.		RE?														RE?							
Plantago schwarzenbergiana Schur	*Plantago schwarzenbergiana* Schur.	M	VU	D2				VU	D2										+					
Platanthera bifolia (L.) Rich.	*Platanthera bifolia* (L.) Rich.		LC				+			+			+	VU	A2abcd				+		LC			
Platanthera chlorantha (Custer) Rchb.	*Platanthera chlorantha* (Cust.) Rchb.		LC		NT		+			+			+	EN	A4abcd				+		LC			
Pleurospermum austriacum (L.) Hoffm.	*Pleurospermum austriacum* (L.) Hoffm.		NT				+	CR	A2ac; B2a (ii,iii)				+			+			+					
Poa babiogorensis Bernátová, Májovský & Obuch	*Poa babiogorensis* Bernátová, Májovský & Obuch	E	CR	D							CR	D												
Poa nemoralis subsp. *carpatica* V. Jirásek	*Poa carpatica* subsp. *supramontana* Bernátová, Májovský, Kliment & Topercer	E	VU	D1+2	VU	D1+D2(i,ii)							+											
Poa margilicola Bernátová & Májovský	*Poa margilicola* Bernátová & Májovský	E	EN	B2ab(iii,v); C2a(ii)	EN	B2a(ii)b(iii,v); C2a(ii)																		
Poa rehmannii (Asch. & Graebn.) Wolosz.	*Poa rehmannii* (Asch. & Graeb.) Wolosz.	E	VU	B1ac(ii)										CR	A4abcd		VU	B2a; B2c(ii)						
Poa remota Forselles	*Poa remota* Forselles		LC				+	EN	B2a; B2b(iii)				+			+			+					
Poa sejunta Bernátová, Májovský & Obuch	*Poa sejuncta* Bernátová, Májovský & Obuch	E	VU	D1+2	VU	D1+D2(i,ii)																		
Podospermum laciniatum (L.) DC.	*Podospermum laciniatum* (L.) DC.		CR	B1ab(i)	CR(PE)														+					
Podospermum roseum (Waldst. & Kit.) Gemeinholzer & Greuter	*Scorzonera rosea* Waldst. & Kit.		NT		CR	A2ac; B2a(ii)b(iii,iv); C2a(i); D							+			+			+					
Polycarpon tetraphyllum (L.) L. subsp. *tetraphyllum*	*Polycarpon tetraphyllum* (L.) L. subsp. *tetraphyllum*	A, N	EN	A2ac; B1ab(ii,iii,iv)	EN	A2ac; B2a(ii)b(ii,iii,iv)													+					
Polycnemum arvense L.	*Polycnemum arvense* L.	A, M	LC		VU	B1ab(iii)c(iii,iv)				+						+			+					
Polycnemum heuffelii Láng	*Polycnemum heuffelii* Láng		CR	B2ab(ii)				RE						CR	B2ab(ii)									
Polygala amara L.	*Polygala amara* L.		LC				+	VU	B2ab(i,,iii)				+			+			+			+		
Polygonum bistorta L.	*Persicaria bistorta* (L.) Samp.		LC				+	VU	B2ab(i,ii,iii)				+			+			+					
Polystichum braunii (Spenn.) Fée	*Polystichum braunii* (Spenn.) Fée		LC				+	EN	B2b(iii, iv); D1				+			+			+					
Polystichum lonchitis (L.) Roth	*Polystichum lonchitis* (L.) Roth		LC				+	EN	D1				+			+			+			+		
Polystichum setiferum (Forssk.) Woyn.	*Polystichum setiferum* (Forssk.) Woyn.		LC					EN	D1				+						+			+		
Pontechium maculatum (L.) Böhle & Hilger	*Echium maculatum* L.	H	NT		VU	A2ac; B2a(i)b(i,ii,iii,iv,v)c(iv); C2a(i),b; D2(i)		VU	A4cd; C2b										+					
Potamogeton acutifolius Link	*Potamogeton acutifolius* Link		VU	B1ab(i)	CR	B2a(iv)c(iv)		EN	B2a; B2b(iv)							+			+			+		
Potamogeton alpinus Balb.	*Potamogeton alpinus* Balb.		VU	B1ab(i)	CR	B2a(iv)b(iv)							+			+	CR	C2b						
Potamogeton compressus L.	*Potamogeton compressus* L.		CR	B1ab(i)	RE														+					
Potamogeton gramineus L.	*Potamogeton gramineus* L.		VU	B1ab(i)	EN	B2a(i,ii)c(ii,iv,v)		RE								+			+			+		
Potamogeton obtusifolius Mert. & W. D. J. Koch	*Potamogeton obtusifolius* Mert. & W. D. J. Koch		VU	B2ab(iii,iv)	CR	B2a(i,ii)b(iii,iv)							+						+					
Potentilla anglica Laichard	*Potentilla anglica* Laichard		VU	B1ab(i)c(ii)			+						+				CR	B2a; B2c(ii); C2a(i)						
Potentilla haynaldiana Janka	*Potentilla haynaldiana* Janka		CR	B1ac(i)						+							CR	B1a; B1c(i)						
Potentilla micrantha DC.	*Potentilla micrantha* Ramond ex DC.		LC		EN	B2a(ii)b(iii)				+	EN	D							+			+		
Potentilla patula Waldst. & Kit. subsp. *patula*	*Potentilla patula* Waldst. & Kit. subsp. *patula*		NT		EN	B2a(ii)b(iii)				+						+			+					
Potentilla pedata Willd.	*Potentilla pedata* Willd. ex Nestl.	M	DD		EN	A2ac; B2a(ii)b(ii,iii,iv,v); D													+					
Potentilla pusilla Host	*Potentilla pusilla* Host		NT				+						+				CR	B2a; B2c(i)						
Primula acaulis (L.) L.	*Primula vulgaris* Huds.		LC				+			+	RE					+			+			+		
Primula auricula L. subsp. *serratifolia* (Rochel) Jav.	*Primula auricula* L. subsp. *serratifolia* (Rochel) Jav.	E	VU	C2a(i)													VU	C2a(i)			CR	B1;B2e;C2a,b; D		
Primula farinosa L.			NT																					
	Primula farinosa L. subsp. *farinosa*				VU	B2a(i)b(iii)					CR	A1a; B2a		DD											
	Primula farinosa L.																CR	C2b						
Primula halleri J. F. Gmel.			NT																					
	Primula halleri J. F. Gmel. subsp. *halleri*										RE													
	Primula halleri J. F. Gmel.													EN	A4abcd				+					
	Primula halleri subsp. *platyphylla* O. Schwarz				VU	D2(i)																		

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Primula minima L.	*Primula minima* L.		LC		LC		+						+	VU	A2abcd				+					
Primula wulfeniana Schott subsp. *baumgarteniana* (Degen & Moesz) Lüdi	*Primula baumgarteniana* Degen & Moesz	B, E	CR	C2a(i)													CR	C2a(i)						
Pritzelago alpina subsp. *dubia* (Pawl.) Soják	*Pritzelago alpina* subsp. *dubia* (Pawl.) Soják		VU	D2	VU	D2(i)																		
Prunus padus subsp. *borealis* (A. Blytt) Nyman	*Padus petraea* Tausch		NT				+				VU	B2a							+					
Prunus tenella Batsch	*Prunus tenella* Batsch		NT		CR	B1a(ii)b(iii)				+									+	VU	B2c;B3b; C1			
Psephellus trinervius (Willd.) Wagenitz	*Centaurea trinervia* Stephan ex Willd.		CR	C2a(i)													CR	C2a(i)						
Pseudorchis albida (L.) Á. Löve & D. Löve	*Pseudorchis albida* (L.) Á. Löve & D. Löve		LC				+						+	VU	A4abc				+					
Pulmonaria angustifolia L.	*Pulmonaria angustifolia* L.		NT		EN	B2a(i)b(iii,iv,v)		EN	B2ab(i,ii,iii,iv)				+			+								
Pulsatilla alpina subsp. *austriaca* Aichele & Schwegler	*Pulsatilla scherfelii* (Ullep.) Skalický		LC				+							VU	A4abcd									
Pulsatilla halleri subsp. *slavica* (G. Reuss) Zämelis	*Pulsatilla slavica* G. Reuss	B, E, H*	NT				+				EN	C2a(ii); D												
Pulsatilla montana subsp. *bulgarica* Rummelsp.	*Pulsatilla montana* (Hoppe) Reichnb. subsp. *bulgarica* Rummelsp.		EN	B2ab(ii)																EN	B2b,c,d			
Pulsatilla patens (L.) Mill.	*Pulsatilla patens* (L.) Mill.	B, H	NT		VU	B2a(i,ii)b(ii,iii,v)							+			+			+					
Pulsatilla pratensis (L.) Mill.	*Pulsatilla pratensis* subsp. *flavescens* (Hazsl.) Holub	M	EN	B1ab(ii,iii,v)	EN	B2a(ii)b(ii,iii,v)				+														
Pulsatilla pratensis (L.) Mill.	*Pulsatilla zimmermannii* Soó	M	CR	B2ab(ii,iii,iv,v); D	CR	B2a(ii)b(ii,iii,iv,v); D																		
Pulsatilla vernalis (L.) Mill.	*Pulsatilla vernalis* (L.) Mill.		NT		EN	B2a(ii)b(v); C2a(i)					EN	B2a; C2a(i)												
Pulsatilla vulgaris subsp. *grandis* (Wender.) Zämelis	*Pulsatilla grandis* Wender.		LC				+			+						+	CR	C2b		VU	B2a,b,c;E			
Pycreus flavescens (L.) Rchb.	*Cyperus flavescens* L.		VU	B1ab(iii,iv,v)c(iv)	CR	A2ac; B2a(i)b(iii,iv,v)c(iv)		VU	B2c(iii,iv)				+			+			+					
Pyrola chlorantha Sw.	*Pyrola chlorantha* Sw.		NT				+	VU	B2a; B2b(iv)				+			+			+					
Pyrola rotundifolia L.	*Pyrola rotundifolia* L.		LC				+	VU	B2b(iii, iv)				+			+			+					
Pyrus spinosa Forssk.	*Pyrus nivalis* Jacq.	A	EN	C2a(i); D				EN	C2a(i); D1										+					
Quercus cerris L.	*Quercus cerris* L.		LC		+					+				EN	A2abcd				+			+		
Quercus frainetto Ten.	*Quercus frainetto* Ten.		LC		VU	A2e; B2a(i)b(iii)				+									+			+		
Radiola linoides Roth	*Radiola linoides* Roth		EN	B1ab(iii,iv,v)	CR	B2a(i,ii)b(iii,iv,v)c(iii,iv)							+						+					
Ranunculus altitatrensis Paclová & Murín	*Ranunculus altitatrensis* Paclová & Murín	E	VU	B2ab(iii,v); D2	VU	B2a(i,ii)b(iii,v); D2(i)																		
Ranunculus carpaticus Herbich	*Ranunculus carpaticus* Herbich	E	NT		EN	B2a(ii)b(iii,v); C2a(ii)										+			+					
Ranunculus flabellifolius Reichenb.	*Ranunculus flabellifolius* Heuff. in Rchb.		VU	B1ab(ii)									+						+	EN	B1			
Ranunculus glacialis L.	*Ranunculus glacialis* L.		NT				+						+				CR	C2a(i)						
Ranunculus illyricus L.	*Ranunculus illyricus* L.		LC		VU	B2a(ii)b(ii,iii,iv)				+						+			+	LC				
Ranunculus lateriflorus DC.	*Ranunculus lateriflorus* DC.	M	CR	B1ab(i)c(iv)	RE			RE											+					
Ranunculus lingua L.	*Ranunculus lingua* L.		NT		CR	A2ac; B2a(i,ii)b(ii,iii,iv,v); C2a(ii)		EN	B2ab(i,ii,iii,iv), C2a(i)				+			+			+					
Ranunculus millefoliatus Vahl	*Ranunculus millefoliatus* Vahl		EN	B1ab(i)	RE														+	EN	B1ab(i)	+		
Ranunculus ophioglossifolius Vill.	*Ranunculus ophioglossifolius* Vill.		VU	D2												+	VU	D1; D2						
Ranunculus peltatus subsp. *baudotii* (Godr.) C. D. K. Cook	*Batrachium baudotii* (Godr.) F. W. Schultz		EN	B1ab(iii)	CR	B2a(i,ii)c(iv)													+					
Ranunculus polyphyllus Willd.	*Ranunculus polyphyllus* Waldst. & Kit.	M	EN	B1ab(i)				CR	B2ab(i,ii,iii,iv)+2c(iv)							+			+					
Ranunculus pygmaeus Wahlenb.	*Ranunculus pygmaeus* Wahlenb.		EN	B2ab(iii,iv,v)	EN	B2a(ii)b(iii,iv,v)																		
Ranunculus reptans L.	*Ranunculus reptans* L.		EN	B1ab(iii,v)	CR	B2a(ii)b(iii,v); D													+					
Ranunculus rionii Lagger	*Batrachium rionii* (Lagger) Nyman		NT		VU	B2a(i,ii)c(ii,iii,iv)				+									+					
Ranunculus thora L.	*Ranunculus thora* L.		NT		NT		+							EN	A2abcd		VU	C2a(i)						
Reseda phyteuma L.	*Reseda phyteuma* L.	A, M	VU	B1ab(i)	EN	A2ace; B2a(i,ii)b(iii,iv); C2a(i)				+														
Rhamnus saxatilis Jacq. subsp. *saxatilis*	*Rhamnus saxatilis* Jacq. subsp. *saxatilis*	M	EN	B2ab(iii)	EN	B2a(ii)b(iii)																		
Rhinanthus alectorolophus (Scop.) Pollich			NT																					
	Rhinanthus alectorolophus (Scop.) Polich.												+			+	VU	C2a(i)						
	Rhinanthus alectorolophus Pollich						+	RE																
Rhinanthus borbasii (Dörfl.) Soó	*Rhinanthus borbasii* (Dörfl.) Soó	M	DD		CR	B1a(i)b(iii)				+			+						+					
Rhinanthus rumelicus Velen.	*Rhinanthus rumelicus* Velen.		NT		EN	B1a(i)b(iii)		VU	B2b(iii, iv)										+			+		
Rhodiola rosea L.	*Rhodiola rosea* L.		LC		LC		+						+	CR	A4abcd				+					
Rhododendron myrtifolium Schott & Kotschy	*Rhododendron myrtifolium* Schott & Kotschy		LC											VU	A4abcd				+					
Rhododendron tomentosum Harmaja	*Rhododendron tomentosum* Harmaja		EN	A2ac; B2ab(i,ii,iii,iv,v)	EN	A2ac; B2a(i)b(i,ii,iii,iv,v)							+											

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Rhynchospora alba (L.) Vahl	*Rhynchospora alba* (L.) Vahl		NT		CR	A2ac; B2a(ii)b(iii,iv)c(iv)					VU	C2a(i)				+	VU	B2a; B2c(iv)						
Ribes alpinum L.	*Ribes alpinum* L.		LC				+	VU	C2a(i); D1				+			+			+	VU	B1;B2c,e; C2a			
Ribes nigrum L.	*Ribes nigrum* L.		NT					VU	B2a; D1				+			+			+					
Ribes petraeum Wulfen	*Ribes petraeum* Wulfen		LC				+	RE					+			+			+					
Ribes spicatum E. Robson	*Ribes spicatum* Robson		DD										+			+	CR	C1						
Rorippa pyrenaica (All.) Rchb.	*Rorippa pyrenaica* (All.) Rchb.		NT		VU	B1a(i)b(iii,iv,v)										+			+			+		
Rosa arvensis Huds.	*Rosa arvensis* Huds.	M	NT		VU	D1+ D2(i,ii)				+						+			+			+		
Rosa glauca Pourr.	*Rosa glauca* Pourr.	N	NT		EN	B2a(i)b(iii)							+			+			+			+		
Rubus chamaemorus L.	*Rubus chamaemorus* L.		CR	C2a(i); D							CR	B2a; C2a(i); D												
Rubus portae-moravicae Holub & Trávn.	*Rubus portae-moravicae* Holub & Trávn.		VU	B2ab(iii)																			VU	B2a(ii)b(iii)
Rubus senticosus Weihe	*Rubus senticosus* Weihe		EN	B2ab(iii)																			EN	B2a(ii)b(iii)
Ruscus hypoglossum L.	*Ruscus hypoglossum* L.		NT		EN	B2a(i,ii)b(iii,v)													+			+		
Sagina apetala Ard.			VU	B1ab(i,iii,iv)																				
	Sagina apetala Ard.															+	CR	C1a(i)						
	Sagina apetala Ard. subsp. *apetala*				CR	A2ac; B2a(i,ii)b(i,ii,iii,iv)																		
Sagina nodosa (L.) Fenzl subsp. *nodosa*	*Sagina nodosa* (L.) Fenzl subsp. *nodosa*		VU	B1ab(iii)	VU	A2ac; B2a(ii)b(iii)							+			+								
Sagina subulata (Sw.) C. Presl	*Sagina subulata* (Sw.) C. Presl		NT		VU	A2ac; B2a(ii)b(i,iii,v)				+						+	CR	B1a; B1c(i)						
Sagittaria sagittifolia L.	*Sagittaria sagittifolia* L.	M	LC		VU	B2a(iv)b(iv)				+			+			+						+		
Salicornia perennans Willd.	*Salicornia prostrata* Pall.	M	RE																				RE	
Salix alpina Scop.			LC																					
	Salix jacquinii Host																CR	C2a(i)						
	Salix alpina Scop.						+						+	CR	B2ac(i,ii,iv)									
Salix aurita L.	*Salix aurita* L.		LC				+	VU	B2a(ii)b(ii,iii,iv)				+			+			+			+		
Salix bicolor Willd.	*Salix phylicifolia* auct.		NT		NT		+						+			+	CR	C2a(i)						
Salix hastata L. subsp. *hastata*	*Salix hastata* L. subsp. *hastata*		LC				+				EN	B2a							+					
Salix helvetica Vill.	*Salix helvetica* Vill.		NT		LC		+				EN	B2a; D												
Salix herbacea L.	*Salix herbacea* L.		LC		LC		+						+	VU	A2abc				+					
Salix lapponum L.	*Salix lapponum* L.		CR	B2ab(i,ii,iii,iv)										CR	B2ab(i,ii,iii,iv)									
Salix myrtilloides L.	*Salix myrtilloides* L.		CR	A2ace; B2ab(ii,iii,iv,v); D	CR	A2ace; B2a(ii)b(ii,iii,iv,v); D											RE							
Salix pentandra L.	*Salix pentandra* L.		LC				+	RE					+			+			+			+		
Salix retusa L.	*Salix kitaibeliana* Willd.	E	VU	B2ab(iii)	VU	B2a(i)b(iii)							+						+					
Salix retusa L.	*Salix retusa* L.		LC		LC		+						+	EN	A4abcd				+					
Salix starkeana Willd.			EN	B1ab(iii)																				
	Salix starkeana Willd.				EN	B2a(i,ii),b(iii); D							+											
	Salix livida Wahlenb.																CR	C2b						
Salvia aethiopis L.	*Salvia aethiopis* L.	M	NT		VU	B1a(i)b(iii)				+														
Saponaria bellidifolia Sm.	*Saponaria bellidifolia* Sm.		VU	B1ab(i)													EN	B1a; B1c(i); C2(i)				+		
Saussurea alpina (L.) DC.	*Saussurea alpina* (L.) DC.		NT		NT		+						+	EN	B2ab(ii,iii,iv,v)				+					
Saussurea porcii Degen		E	CR	B1ab(i,ii,iii,iv,v)																				
	Saussurea porcii Degen													CR	B1ab(i,ii,iii,iv,v)									
	Saussurea serrata Stankov & Taliev																RE?							
Saussurea pygmaea (Jacq.) Spreng.	*Saussurea pygmaea* (Jacq.) Sprengel		NT				+				ENB2a; C2a(i)													
Saxifraga adscendens L.	*Saxifraga adscendens* L.		LC				+	CR	A2ac; B2ab (ii,iii)+c(iv); C2a(i)				+			+			+					
Saxifraga aizoides L.	*Saxifraga aizoides* L.		LC				+						+	CR	B1ab(i,ii,iii,iv,v)				+			+		
Saxifraga androsacea L.	*Saxifraga androsacea* L.		LC		LC		+						+	CR	B1ab(i,ii,iii,iv,v)				+					
Saxifraga bryoides L.	*Saxifraga bryoides* L.		NT		LC		+						+	CR	B1ab(i,ii,iii,iv,v)				+					
Saxifraga bulbifera L.	*Saxifraga bulbifera* L.		LC				+			+				CR	C1				+					
Saxifraga carpatica Sternb.	*Saxifraga carpatica* Sternb.		NT				+						+	EN	A4abcd				+					
Saxifraga cernua L.	*Saxifraga cernua* L.		NT		VU	D2(i,ii)					VU	C2a(i)							+					
Saxifraga cymbalaria L. subsp. *cymbalaria*	*Saxifraga cymbalaria* L.		EN	B2ac(iii)													EN	B2a; B2c(iii)						
Saxifraga hirculus L.		B, H	CR	B2ac(i); D																				
	Saxifraga hirculus L. subsp. *hirculus*										RE													
	Saxifraga hirculus L.																EN	B2a; B2c(i); D						
Saxifraga luteoviridis Schott & Kotschy	*Saxifraga luteo-viridis* Schott & Kotschy		NT											CR	B1b(i,ii,iii,iv,v)				+					
Saxifraga mutata L.	*Saxifraga mutata* L.		VU	B2ab(iii,v); D2	VU	B2a(i)b(iii,v); D2(i,ii)													+					
Saxifraga oppositifolia L.	*Saxifraga oppositifolia* L.		LC				+						+	DD					+					

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Saxifraga pedemontana subsp. *cymosa* Engl.	*Saxifraga pedemontana* All. subsp. *cymosa* Engler		NT											DD					+					
Saxifraga retusa Gouan	*Saxifraga retusa* Gouan		NT				+				VU	B2a; C2a(i)							+					
Scabiosa canescens Waldst. & Kit.	*Scabiosa canescens* Waldst. & Kit.		NT		VU	B1a(i)b(iii)				+			+						+					
Scabiosa columbaria subsp. *pseudobanatica* (Schur) Ják. & Csapody	*Scabiosa columbaria* L. subsp. *pseudobanatica* (Schur) Ják.	E	VU	B1ab(iii,iv)				EN	A3c, d; B2ab(iii,iv); D										+					
Scabiosa triandra L.	*Scabiosa triandra* L.	M	VU	A2ac; B2ab(iii,iv)	VU	A2ac; B2a(ii)b(iii,iv)		EN	B2a(ii)b(i,ii)															
Scandix pecten-veneris L.	*Scandix pecten-veneris* L. subsp. *pecten-veneris*	A	VU	B1ab(i,iii,iv,v)c(iii); C2b	CR	A2ac; B2a(ii)b(ii,iii,iv,v)c(iii); D											VU	C2b						
Scheuchzeria palustris L.			NT																					
	Scheuchzeria palustris L.				EN	B2a(i)b(iii)								EN	B2ab(ii,iii,iv)				+					
	Scheuchzeria palustris L. subsp. *palustris*										EN	B2a												
Schoenoplectus supinus (L.) Palla	*Schoenoplectus supinus* (L.) Palla	A	VU	B2ab(iii)				VU	B2a; B2b(iii)							+			+					
Schoenus ferrugineus L.	*Schoenus ferrugineus* L.		NT		EN	A2ce; B2a(i)b(ii,iii,iv,v)								VU	A3bc				+					
Schoenus nigricans L.	*Schoenus nigricans* L.		EN	B1ab(iii)				RE											+					
Scilla bifolia L.	*Scilla vindobonensis* Speta		VU	D2				VU	D2				+						+			+		
Scleranthus perennis L. subsp. *perennis*	*Scleranthus perennis* L. subsp. *perennis*		LC		CR	A2ac; B2a(ii)b(iii,iv)				+			+			+			+			+		
Scleranthus verticillatus Tausch	*Scleranthus verticillatus* Tausch		NT		EN	A2ac; B2a(i,ii)b(iii,iv)c(iv)													+					
Scopolia carniolica Jacq.	*Scopolia carniolica* Jacq.		NT				+	VU	A3cd				+	LC					+	CR	B2c; C2b			
Scorzonera hispanica L.	*Scorzonera hispanica* L.		NT		VU	B1a(i)b(iii)				+									+			+		
Scorzonera parviflora Jacq.	*Scorzonera parviflora* Jacq.	M	EN	B2ab(iii,iv)	CR	A2ac; B2a(i,ii)b(iii,iv)													+					
Scutellaria alpina L.	*Scutellaria alpina* L. subsp. *alpina*		CR	B2ac(i)													CR	B2a; B2c(i)						
Scutellaria altissima L.	*Scutellaria altissima* L.	N	LC		EN	A2ac; B2a(ii)b(ii,iv,v)				+									+			+		
Scutellaria supina L.	*Scutellaria supina* L.		CR	D													CR	D						
Securigera elegans (Pančič) Lassen	*Securigera elegans* (Pančič) Lassen		VU	B1ab(iv)			+	EN	B1; B2a					EN	B2ab(ii,iii,iv)							+		
Sedum annuum L.	*Sedum annuum* L.		NT		VU	A2ac; B2a(i)b(iii, iv,v); C2a(i)										+			+			+		
Sedum dasyphyllum L. subsp. *dasyphyllum*	*Sedum dasyphyllum* L.		VU	B1ab(i)													EN	C2b				+		
Selaginella selaginoides (L.) Schrank & Mart.	*Selaginella selaginoides* (L.) Beauv. ex Mart. & Schrank		LC				+						+	VU	A2abc				+					
Selinum dubium (Schkuhr) Leute			NT																					
	Selinum dubium (Schkuhr) Thell.							VU	A3cd															
	Cnidium dubium (Schkuhr) Thell.												+			+	EN	A2						
Sempervivum carpathicum subsp. *heterophyllum* (Hazsl.) Letz	*Sempervivum carpathicum* subsp. *heterophyllum* (Hazsl.) Letz	E	VU	B2ab(iii,v); C2a(i)	VU	B2a(i)b(iii,v); C2a(i)																		
Sempervivum marmoreum Griseb.	*Sempervivum marmoreum* Griseb.		NT											EN	D				+			+		
Sempervivum matricum Letz	*Sempervivum matricum* Letz		NT		VU	B2a(i)b(iii,iv,v); C2a(i)				+														
Sempervivum montanum L.	*Sempervivum montanum* L.	E	NT										+	CR	A4abc				+					
Senecio doria L.	*Senecio doria* L.	M	LC		CR	A2c; B2a(ii)b(iii)				+														
Senecio sarracenicus L.	*Senecio sarracenicus* L.		NT					VU	A3c				+						+					
Senecio squalidus subsp. *rupestris* (Waldst. & Kit.) Greuter	*Senecio rupestris* Waldst. & Kit.		NT		RE														+			+		
Senecio umbrosus Waldst. & Kit.	*Senecio umbrosum* Waldst. & Kit. s. str.		LC				+				RE								+					
Seseli gracile Waldst. & Kit.	*Seseli gracile* Waldst. & Kit.		NT																+	EN	B1			
Seseli hippomarathrum Jacq.	*Seseli hippomarathrum* Jacq.		LC		VU	B1a(i)b(iii)				+														
Seseli leucospermum Waldst. & Kit.	*Seseli leucospermum* Waldst. & Kit.		VU	C2a(ii)				VU	C2a(ii)															
Seseli pallasii Besser	*Seseli pallasii* Besser		NT		EN	B1a(i)b(iii)				+						+			+					
Seseli peucedanoides (M. Bieb.) Koso-Pol.			VU	A3cd; B1ab(i,iii,iv,v)c(iv); C2a(i)																				
	Seseli peucedanoides (M. Bieb.) Koso-Pol.							VU	A3cd										+					
	Gasparrinia peucedanoides (M. Bieb.) Thell.				CR	B2a(i)b(ii,iii,iv,v)c(iv); C2a(i)																		
Sesleria caerulea (L.) Ard.	*Sesleria albicans* Kit. ex Schult.		LC				+	EN	B2a; B2b(iii)				+						+					
Sesleria coerulans Friv.	*Sesleria bielzii* Schur		NT								VU	C2a(ii)				+			+					
Sesleria heufleriana Schur	*Sesleria heufleriana* Schur.		NT				+	VU	B1; B2a							+			+					
Sesleria sadleriana Janka	*Sesleria sadleriana* Janka		EN	B1ab(iii)	CR	B2a(i,ii)b(iii)				+														
Sesleria uliginosa Opiz	*Sesleria uliginosa* Opiz		VU	A2ac; B1ab(i,iii,iv,v)	VU	A2ac; B2a(i)b(ii,iii,iv,v)											CR	B2a; B2c(ii); C2a(ii)						
Sibbaldia procumbens L.	*Sibbaldia procumbens* L.		NT		CR	B2a(i)b(iii); D					VU	B2a												
Silaum silaus (L.) Schinz & Thell.	*Silaum silaus* (L.) Schinz & Thell.		LC				+	CR	B2ab(ii, v)				+						+					
Silene bupleuroides L. subsp. *bupleuroides*	*Silene bupleuroides* L. subsp. *bupleuroides*		VU	B1ab(i,iii,iv)	EN	A2ac; B2a(i)b(iii,iv,v)		VU	B2ab(i, ii, iii)										+					
Silene conica L.	*Silene conica* L.	M	NT		EN	B2a(ii)b(iii)c(iv)				+			+						+			+		
Silene gallica L.	*Silene gallica* L.	A	NT		CR	A2ac; B2a(i)b(iii,iv,v)							+						+					

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Silene lerchenfeldiana Baumg.	*Silene lerchenfeldiana* Baumg.		VU	B1ac(ii)													VU	B1a; B1c(ii)						
Silene nivalis (Kit.) Rohrb.	*Silene nivalis* (Kit.) Rohrb.	E	VU	B2ac(iii)													VU	B2a; B2c(iii)						
Silene nutans subsp. *dubia* (Rohrb.) Zapal.		E	NT																					
	Silene nutans subsp. *dubia* (Herbich) Zapal.				CR	B2ab(iii,v); C2a(ii); D										+			+					
	Silene dubia L.										EN	C2a(i)												
Silene rupestris L.	*Silene rupestris* L.		CR	B2ac(i)													CR	B2a; B2c(i)						
Silene zawadzkii Herbich	*Silenanthe zawadskii* (Herbich) Griseb. &	E	NT											CR	B2ab(i,ii,iii,iv,v)				+					
Sisymbrium austriacum Jacq. subsp. *austriacum*	*Sisymbrium austriacum* Jacq. subsp. *austriacum*	N	VU	D1+2	VU	D1+D2(i,ii)													+					
Sisymbrium polymorphum (Murray) Roth	*Sisymbrium polymorphum* (Murr.) Roth	M	VU	B1ab(i,iii,iv)				EN	B2ab(i,ii,iii,iv)							+			+					
Sium sisarum L.	*Sium sisarum* L.		VU	B1ab(i)				EN	A3cd										+					
Soldanella pseudomontana F. K. Mey.	*Soldanella pseudomontana* subsp. *pieninica* Hrouda & Kochjarová, ined.	E	CR	D	CR	D																		
Sorbus atrimontis Májovský, Bernátová & Topercer	*Sorbus atrimontis* Bernátová & Májovský	E	CR	B2ab(i,ii,iii,iv,v); C2a(i)	CR	B2a(i)b(i,ii,iii,iv,v); C2a(i)																		
Sorbus austriaca subsp. *hazslinszkyana* (Soó) Kárpáti	*Sorbus hazslinszkyana* (Soó) Májovský		NT				+	CR	C2a(i); D1															
Sorbus borbasii Jav.	*Sorbus borbasii* Jav.	E	VU	B1ac(i)													VU	B1a; B1c(i)						
Sorbus buekkensis (Soó) Soó	*Sorbus buekkensis* Soó		VU	B2ab(ii); D1				VU	B2a(i,ii)b(i,iii,iv,v)															
Sorbus caeruleomontana Májovský, Bernátová & Topercer	*Sorbus caeruleomontana* Bernátová & Májovský	E	CR	B2ab(i,iii,v); C2a(ii)	CR	B2a(ii)b(i,iii,v); C2a(ii)																		
Sorbus carpatica Borbás	*Sorbus zolyomii* (Soó) Kárpáti		NT				+	EN	B2a				+											
Sorbus dacica Borbas	*Sorbus dacica* Borbas	E	EN	B2ac(ii)													EN	B2a; B2c(ii)						
Sorbus graeca (Spach) Schauer	*Sorbus graeca* (Spach) Lodd. ex Schauer		NT		CR	B2a(i)b(i,iv,v); C2a(i); D				+			+						+			+		
Sorbus haljamovae Májovský, Bernátová & Topercer	*Sorbus haljamovae* Bernátová & Májovský	E	VU	B2ab(iii); C2a(i); D1+2	VU	B2a(i,ii)b(iii); C2a(i); D1+D2(i)																		
Sorbus chamaemespilus (L.) Crantz	*Sorbus chamaemespilus* (L.) Crantz		NT				+				VU	B2a					EN	C2a(i)						
Sorbus javorkae (Soó) Kárpáti	*Sorbus javorkae* (Soó) Kárpáti		NT				+	VU	B2a(i,ii)b(i,iii,iv,v)															
Sorbus margittaiana (Jáv.) Kárpáti	*Sorbus margittaiana* (Jáv.) Kárpáti	E	EN	B2ab(i,iii,iv,v); C2a(i)	EN	B2a(i,ii)b(i,iii,iv,v); C2a(i)																		
Sorbus montisalpae Májovský, Bernátová & Topercer	*Sorbus montisalpae* Bernátová & Májovský	E	EN	B2ab(i,iii,iv,v); C2a(i)	EN	B2a(i,ii)b(i,iii,iv,v); C2a(i)																		
Sorbus pannonica Kárpáti	*Sorbus thaiszii* (Soó) Kárpáti		NT				+	VU	B2a(i,ii)b(i,iii,iv,v)															
Sorbus pekarovae Májovský & Bernátová	*Sorbus pekarovae* Májovský & Bernátová	E	CR	B2ab(iii,v); C2a(ii)	CR	B2a(ii)b(iii,v); C2a(ii)																		
Sorbus scepusiensis Kovanda	*Sorbus scepusiensis* Kovanda	E	CR	B2b(i,ii,iv,v); C2a(ii)	CR	B2b(i,ii,iv,v); C2a(ii)																		
Sorbus sooi (Máthé) Kárpáti	*Sorbus sooi* (Máthé) Kárpáti		NT				+	VU	B2a(i,ii)b(i,iii,iv,v)															
Sorbus zuzanae Májovský, Bernátová &Topercer	*Sorbus zuzanae* Májovský & Bernátová	E	VU	B2ab(iii); C2a(i); D1+2	VU	B2a(i,ii)b(iii); C2a(i); D1+D2(i)																		
Sparganium angustifolium Michx.	*Sparganium angustifolium* F. Michx.		VU	B1ab(iii)	EN	B2a(ii)b(iii); C2a(ii)					CR	B2a; C2a(i); D		DD										
Sparganium emersum Rehmann	*Sparganium emersum* Rehmann		NT				+	VU	B2a; B2b(iv)			+			+			+			+			
Sparganium natans L.	*Sparganium natans* L.		EN	B2ab(iii)	EN	B2a(i)b(iii)		RE																
Spergula pentandra L.	*Spergula pentandra* L.		EN	B1ab(i,iii)c(iii,iv)	CR	D													+					
Spiraea media Schmidt subsp. *media*	*Spiraea media* Schmidt subsp. *media*		LC				+			+	VU	B2a; C2a(i)			+			+			+			
Spiraea salicifolia L.	*Spiraea salicifolia* L.		VU	B1ab(i,iii)				RE				+			+			+						
Spiranthes spiralis (L.) Chevall.	*Spiranthes spiralis* (L.) Chevall.		NT		CR	A2ac					CR	A2a; B2a		EN	C2a(ii)			+						
Stachys alpina L.	*Stachys alpina* L.		LC				+	RE				+			+			+			+			
Staphylea pinnata L.	*Staphylaea pinnata* L.		NT				+			+		+		EN	A4abcd			+			+			
Stellaria longifolia Willd.	*Stellaria longifolia* H. L. Mühl. ex Willd.		VU	A2ac; B1ab(i,iii,iv)	VU	A2ac; B2a(i)b(ii,iii,iv)					CR	B2a; C2a(i); D			+			+						
Stellaria palustris Hoffm.			NT																					
	Stellaria palustris Retz.							VU	B2ab(i,ii,iii,iv)			+			+			+						
	Stellaria palustris Ehrh. ex Hoffm.				VU	A2ac; B2a(i,ii)b(iii,iv)																		
Sternbergia colchiciflora Waldst. & Kit	*Sternbergia colchiciflora* Waldst. & Kit		EN	B1ab(i)				RE											+			+		
Stipa dasyphylla (Lindem.) Trautv.	*Stipa dasyphylla* (Czern. ex Lindem) Trautv.		NT				+			+							VU	B2a; B2c(ii)						
Stipa eriocaulis Borbás	*Stipa eriocaulis* C. Koch		NT				+	RE											+					
Stipa pulcherrima subsp. *crassiculmis* (P. A. Smirn.) Tzvelev	*Stipa crassiculmis* subsp. *euroanatolica* Martinovský		EN	B1ab(iii)c(ii)	CR	B2a(ii)b(iii); D											EN	B2a; B2c(ii); C2a(ii)						
Stipa transcarpatica Klokov	*Stipa transcarpatica* Klokov		EN	C2a(ii)										EN	C2a(ii)									
Stipa zalesskii Wilensky	*Stipa smirnovii* Martinovský	H*, M	RE		RE																			
Suaeda prostrata Pall.	*Suaeda prostrata* Pall.	M	RE																				RE	

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Succisella inflexa (Kluk) G. Beck	*Succisella inflexa* (Kluk.) Beck		LC				+	VU	B2ab(i,ii,iii,iv)				+	VU	A4abcd				+					
Syringa josikaea J. Jacq. ex Rchb.	*Syringa josikaea* J. Jacq. ex Rchb.	B, E, H	NT											VU	A4abcd				+					
Taraxacum austrinum G. E. Haglund (sect. Palustria)	*Taraxacum austrinum* G. E. Haglund (sect. Palustria)		RE?																				RE?	
Taraxacum erythrocarpum Kirschner & Štěpánek (sect. Erythrocarpa)	*Taraxacum erythrocarpum* Kirschner & Štěpánek (sect. Erythrocarpa)	E	EN	B1ab(iii,iv,v)	EN	B1a(i,ii)b(iii,iv,v)																		
Taraxacum gelertii Raunk. (sect. Naevosa)	*Taraxacum gelertii* Raunk. (sect. Naevosa)		EN	B2ab(iii,iv)																			EN	B2a(ii)b(iii,iv)
Taraxacum gibberum Markl. (sect. Ruderalia)	*Taraxacum gibberum* Markl. (sect. Ruderalia)		VU	B2ab(iii,iv)																			VU	B2a(ii)b(iii,iv)
Taraxacum kernianum Hagend. & al. (sect. Hamata)	*Taraxacum kernianum* Hagend. & al. (sect. Hamata)		EN	B2ab(iii,iv)																			EN	B2a(ii)b(iii,iv)
Taraxacum maricum Vašut & al. (sect. Erythrosperma)	*Taraxacum maricum* Vašut & al. (sect. Erythrosperma)		VU	B2ab(iii)																			VU	B2a(ii)b(iii)
Taraxacum nigricans (Kit.) Rchb. (sect. Alpestria)	*Taraxacum nigricans* (Kit.) Rchb. (sect. Alpestria)	E	NT		EN	B2a(i,ii)b(iii)							+			+			+					
Taraxacum paludem-ornus Kirschner & Štepánek (sect. Palustria)	*Taraxacum paludem-ornans* Kirschner & Štěpánek (sect. Palustria)		EN	B2ab(iii,iv)																			EN	B2a(ii)b(iii,iv)
Taraxacum pieninicum Pawl. (sect. Erythrocarpa)	*Taraxacum pieninicum* Pawl. (sect. Erythrocarpa)	E	CR	B2ab(ii); C2a(i); D							CR	B2a; C2a(i); D												
Taraxacum pseudohamatum Dahlst. (sect. Hamata)	*Taraxacum pseudohamatum* Dahlst. (sect. Hamata)		CR	B2ab(iii,iv)																			CR	B2a(ii)b(iii,iv)
Taraxacum quadrans H. Øllg. (sect. Hamata)	*Taraxacum quadrans* H. Øllg. (sect. Hamata)		CR	B2ab(iii,iv)																			CR	B2a(ii)b(iii,iv)
Taraxacum quaesitum Kirschner & Štěpánek (sect. Palustria)	*Taraxacum quaesitum* Kirschner & Štěpánek (sect. Palustria)		EN	B2ab(iii)	EN	B2a(i,ii)b(iii)																		
Taraxacum raunkiaeri Wiinst. (sect. Naevosa)	*Taraxacum duplidentifrons* Dahlst. (sect. Naevosa)		EN	B2ab(iii,iv)																			EN	B2a(ii)b(iii,iv)
Taraxacum rupicaprae Štěpánek & Kirschner (sect. Alpestria)	*Taraxacum rupicaprae* Štěpánek & Kirschner (sect. Alpestria)		EN	B2ab(ii); D	EN	B2a(i,ii); D																		
Taraxacum serotinum (Waldst. & Kit.) Fisch. (sect. Dioszegia)			LC																					
	Taraxacum serotinum (Waldst. & Kit.) Poir.							VU	A3cd										+					
	Taraxacum serotinum (Waldst. & Kit.) Fisch. (sect. Dioszegia)				EN	B1a(i,ii)b(iii,iv,v)																	DD	
Taraxacum subpolonicum Kirschner & Štěpánek (sect. Palustria)	*Taraxacum subpolonicum* Kirschner & Štěpánek (sect. Palustria)		EN	B2ab(iii)	EN	B2a(i,ii)b(iii)																		
Taxus baccata L.	*Taxus baccata* L.		LC				+	VU	B2a; D1		+			EN	A1abcd				+					
Telekia speciosa (Schreb.) Baumg.	*Telekia speciosa* (Schreb.) Baumg.		LC				+	EN	A4ac; C2a(i)		+					+			+			+		
Tephroseris crispa (Jacq.) Rchb.	*Tephroseris crispa* (Jacq.) Rchb.		LC				+	VU	B2ab(i, ii, iii, iv, v)		+													
Tephroseris integrifolia subsp. *aurantiaca* (Willd.) B. Nord.			NT																					
	Tephroseris aurantiaca (Willd.) Griseb. & Schenk						+	EN	A4ac; C2a(i)															
	Senecio aurantiacus (Hoppe) Less.										EN	B2a; C2a(i)							+					
Tephroseris integrifolia (L.) Holub subsp. *integrifolia*	*Senecio integrifolius* (L.) Clairv. subsp. *integrifolius*		NT				+			+	CR	B2a; C2a(i); D							+					
Tephroseris longifolia subsp. *moravica* Holub	*Tephroseris longifolia* subsp. *moravica* Holub	E, H	EN	B2ab(iii,v)c(iv)	EN	B2a(i,ii)b(iii,v)c(iv)																		
Tephroseris papposa (Rchb.) Schur subsp. *papposa*	*Tephroseris papposa* (Rchb.) Schur subsp. *papposa*		EN	A2ac; B2ab(ii,iii,iv,v); C2a(i)	EN	A2ac; B2a(i,ii)b(ii,iii,iv,v); C2a(i)							+						+					
Teucrium botrys L.	*Teucrium botrys* L.		NT				+	VU	B2ab(i, ii, iv, v)		+						VU	C2a(i)						
Teucrium scordium L.	*Teucrium scordium* L.	M	NT		EN	A2cd				+									+			+		
Thalictrum flavum L.	*Thalictrum flavum* L.		NT		EN	B1a(i)b(iii)							+			+			+			+		

EuroMed name	National name	Character	Carpathians category	Carpathians criteria	SK cat	SK crit	SK pres	HU cat	HU crit	HU pres	PL cat	PL crit	PL pres	UA cat	UA crit	UA pres	RO cat	RO crit	RO pres	RS cat	RS crit	RS pres	CZ cat	CZ crit
Thalictrum foetidum L.	*Thalictrum foetidum* L.		NT				+	EN	B2ab(i, ii, iv, v); C2a(i)										+			+		
Thalictrum minus subsp. *pseudominus* (Borbás) Soó	*Thalictrum pseudominus* Borbás		NT				+	VU	B2ab(i,ii,iii)															
Thalictrum simplex subsp. *galioides* (DC.) Korsh.	*Thalictrum simplex* subsp. *galioides* (DC.) Korsh.		NT		VU	B1a(i)b(iii)				+									+					
Thelypteris limbosperma (All.) H. P. Fuchs	*Oreopteris limbosperma* (All.) Holub		LC				+	CR	D1				+			+			+					
Thelypteris palustris Schott	Thelypteris palustris Salisb.		NT				+	VU	B2a; B2c(iv)				+			+			+					
Thesium dollineri Murb.	Thesium dollineri Murb.	M, N	CR	B2ab(iii)	CR	B2a(ii)b(iii)																		
Thesium pyrenaicum Pourr.	Thesium pyrenaicum Pourr.		RE		RE																			
Thymus longedentatus (Degen & Urum.) Ronniger	*Thymus longedentatus* (Degen & Urum.) Ronniger	M	RE?																	RE?				
Thymus pulegioides subsp. *pannonicus* (All.) Kerguélen	*Thymus pulegioides* subsp. *carniolicus* (Borbás) P. A. Schmidt		CR	B2ab(iii)	CR	B2a(i,ii)b(iii)																		
Tofieldia pusilla (Michx.) Pers.	*Tofieldia pusilla* (F. Michx.) Pers.		VU	D2	VU	D2(i,ii)																		
Tordylium maximum L.	*Tordylium maximum* L.		NT		EN	B1a(i)b(iii)				+						+			+			+		
Trapa natans L.	*Trapa natans* L.	B, M	NT		VU	B2a(i,ii)c(iii,iv)				+				LC								+		
Traunsteinera globosa (L.) Rchb.	*Traunsteinera globosa* (L.) Rchb.		LC				+	EN	C2a(i)				+	VU	A2abcd				+					
Trientalis europaea L.	*Trientalis europaea* L.		NT				+						+			+	CR	C2b						
Trifolium badium Schreb.	*Trifolium badium* Schreb.		NT				+						+	VU	A2abcd				+					
Trifolium lupinaster L.			EN	A2ace; B1ab(iii,v)																				
	Trifolium lupinaster f. *angustifolia* Litw.																CR	B1a; B1c(i); C2b						
	Trifolium romanicum Brandza				CR	A2ace; B2a(ii)b(iii,v); C2a(ii); D																		
Trifolium pannonicum Jacq.	*Trifolium pannonicum* Jacq.		LC				+			+	VU	B2a; C2a(i)				+			+			+		
Trifolium retusum L.	*Trifolium retusum* L.	M	NT		CR(PE)					+									+					
Trifolium striatum L.	*Trifolium striatum* L.	M	NT		EN	A2ac; B2a(i)b(ii,iii)				+						+			+			+		
Trifolium vesiculosum Savi	*Trifolium vesiculosum* Savi	M, N	CR	B1ab(i)				RE											+	DD				
Triglochin maritima L.	*Triglochin maritima* L.		VU	A2ac; B1ab(iii,iv,v)	VU	A2ac; B2a(i)b(iii,iv,v)							+			+			+					
Triglochin palustris L.	*Triglochin palustre* L.		NT				+	VU	A3cd				+			+			+					
Trichophorum alpinum (L.) Pers.			EN	B1ab(iii)																				
	Baeothryon alpinum (L.) T. V. Egorova										EN	B2a; C2a(i)												
	Trichophorum alpinum (L.) Pers.				EN	B2a(ii)b(iii)																		
Trichophorum cespitosum (L.) Hartm. subsp. *cespitosum*	*Trichophorum cespitosum* (L.) Hartm. subsp. *cespitosum*		EN	A2ac; B2ab(ii,iv,v); C2a(ii)	EN	A2ac; B2a(i)b(ii,iv,v); C2a(ii)										+								
Trichophorum pumilum (Vahl) Schinz & Thell.	*Trichophorum pumilum* (Vahl) Schinz & Thell.		EN	A2ac; B2ab(iii)	EN	A2ac; B2a(i)b(iii)																		
Trinia glauca (L.) Dumort. subsp. *glauca*	*Trinia glauca* (L.) Dumort. subsp. *glauca*		NT		VU	B1a(i)b(iii)				+									+			+		
Trinia kitaibelii M. Bieb.	*Trinia ucrainica* Schischk.		EN	B1ab(iii)	EN	B1a(i)b(iii)																		
Tripleurospermum tenuifolium (Kit.) Freyn	*Matricaria trichophylla* (Boiss.) Boiss.		VU	C2a(i)													VU	C2a(i)				+		
Trollius europaeus L. s. l.	*Trollius europaeus* L.		LC				+	CR	C2a(i)				+			+			+					
Tulipa hungarica Borbás	*Tulipa hungarica* Borbás	B, E, H	VU	D2															+	RE				
Turgenia latifolia (L.) Hoffm.	*Turgenia latifolia* (L.) Hoffm.	M	VU	B1ab(i,iii,iv)	EN	B2a(ii)b(ii,iii,iv)		RE											+					
Typha shuttleworthii W. D. J. Koch & Sond.	*Typha shuttleworthii* W. D. J. Koch & Sond.	B	VU	B1ab(i)	CR	B2a(i,ii)b(iii)										+			+	RE?				
Utricularia australis R.Br.	*Utricularia australis* R. Br.		NT				+			+			+	VU	B2ab(i,ii,iii,iv,v)				+			+		
Utricularia bremii Heer	*Utricularia bremii* Heer		DD					RE					+	DD					+					
Utricularia minor L.	*Utricularia minor* L.		VU	A2ac; B1ab(iii,iv,v)	EN	A2ac; B2a(ii)b(iii,iv,v)		CR	C2a(i)		VU	C2a(i)							+					
Utricularia vulgaris L.			NT																					
	Utricularia vulgaris L.				VU	B2a(i,ii)c(ii,iii,iv)				+						+			+			+		
	Utricularia vulgaris L. subsp. *vulgaris*										VU	A2a												
Vaccaria hispanica (Mill.) Rauschert	*Vaccaria hispanica* subsp. *grandiflora* (Ser. ex DC.) Holub	A	CR	B1ab(i)	RE						RE								+					
Vaccinium microcarpum (Rupr.) Schmalh.			NT																					
	Oxycoccus microcarpus Turcz. ex Rupr.										EN	C2a(i)		EN	A2abcd									
	Vaccinium microcarpus (Turcz. ex Rupr.) Schmalh.				CR	B1a(i)b(iii)		EN	D2										+					
Vaccinium oxycoccos L.	*Oxycoccus palustris* Pers.		LC				+				VU	B2b(iii)				+			+					
Vaccinium uliginosum L. subsp. *uliginosum*	*Vaccinium uliginosum* L. subsp. *uliginosum*		NT		VU	A2ac; B2a(i)b(iii,iv,v)							+			+			+					

EuroMed name	National name	Character	Carpathians category	Carpathians criteria	SK cat	SK crit	SK pres	HU cat	HU crit	HU pres	PL cat	PL crit	PL pres	UA cat	UA crit	UA pres	RO cat	RO crit	RO pres	RS cat	RS crit	RS pres	CZ cat	CZ crit
Vaccinium vitis-idaea L.	*Vaccinium vitis- idaea* L.		LC				+	VU	B2b(iii, iv); C1				+			+			+					
Valeriana dioica subsp. *simplicifolia* (Rchb.) Nyman	*Valeriana simplicifolia* (Rchb.) Kabath		LC				+	CR	B2ab(ii,iii,iv,v)				+			+			+					
Valeriana officinalis subsp. *sambucifolia.* (J. C. Mikan) Čelak	*Valeriana officinalis* L. subsp. *sambucifolia* (J. C. Mikan) Čelak.		LC				+	EN	B2ab(ii,iii,iv)				+						+					
Valeriana tripteris subsp. *austriaca* E. Walther	*Valeriana tripteris* L. subsp. *austriaca* E. Walther		LC				+	VU	A3c; C2a(i)							+								
Valerianella coronata (L.) DC.	*Valerianella coronata* (L.) DC.	M	VU	B1ab(i)	EN	A2ac; B2a(ii)b(iii,iv); C2b													+			+		
Veratrum album L. subsp. *album*	*Veratrum album* L. subsp. *album*		LC		VU	B2a(i)b(ii,iii,iv,v); C2a(i); D1+D2(i)							+			+			+			+		
Veratrum nigrum L.	*Veratrum nigrum* L.		VU	D2				VU	D2										+			+		
Verbascum glabratum subsp. *brandzae* (D. Brândză) Murb.	*Verbascum glabratum* Friv. subsp. *brandzae* (Franch. ex D. Brândză) Murb.		VU	B2ac(ii)													VU	B2a; B2c(ii)						
Verbascum lychnitis subsp. *moenchii* (Schultz) Holub & Mladý	*Verbascum lychnitis* subsp. *moenchii* (Schultz) Holub & Mladý	M	RE																				RE	
Verbascum speciosum Schrad. subsp. *speciosum*	*Verbascum speciosum* Schrad. subsp. *speciosum*		NT		VU	B1a(ii)b(iii)		VU	B1a(ii)b(iii)															
Veronica acinifolia L.	*Veronica acinifolia* L.		EN	B1ab(iii)	RE											+			+					
Veronica agrestis L.	*Veronica agrestis* L.	A, M	NT		CR	A2ac; B2a(i)b(i,ii,iv,v)							+			+			+			+		
Veronica anagalloides Guss.	*Veronica anagalloides* Guss.	M, N	NT		VU	B1a(i,ii)c(iii,iv,v)				+			+			+			+					
Veronica aphylla L.	*Veronica aphylla* L.		NT				+						+	EN	A4abc				+					
Veronica austriaca subsp. *jacquinii* (Baumg.) Eb. Fisch.	*Veronica jacquinii* Baumg.		VU	A2ac; B1ab(iii,iv,v)	CR	A2ac; B2a(ii)b(iii,iv,v)				+						+			+			+		
Veronica bachofenii Heuff.	*Veronica bachofenii* Heuffel		NT													+			+	RE?		+		
Veronica bellidioides L.	*Veronica bellidioides* L.		EN	B1ab(i)										CR	D				+					
Veronica catenata Pennell	*Veronica catenata* Pennell	M, N	LC		EN	B1a(i,ii)c(iii,iv,v)				+									+					
Veronica fruticans Jacq.	*Veronica fruticans* Jacq.		LC				+						+	EN	C1				+					
Veronica incana subsp. *pallens* (Host) Albach	*Pseudolysimachion incanum* subsp. *pallens* (Host) Trávníček		CR	B1ab(iii)	CR	B1a(ii)b(iii)																		
Veronica longifolia L.	*Pseudolysimachion maritimum* (L.) Á. Löve & D. Löve		NT		VU	B1a(i)b(iii)				+			+			+			+					
Veronica montana L.	*Veronica montana* L.		LC				+	VU	B2b(iii, iv)				+			+			+					
Veronica opaca Fr.	*Veronica opaca* Fr.	A	VU	B1ab(i,iii)	CR(PE)			CR	B2a; C1				+			+			+					
Veronica scardica Griseb.	*Veronica scardica* Griseb.		VU	B2ab(iv)	RE			RE									VU	B2a; B2b(vi)						
Veronica spicata subsp. *fischeri* (Trávn.) Albach	*Pseudolysimachion spicatum* subsp. *fischeri* Trávníček		VU	B1ab(iii)	VU	B1a(i)b(iii)				+														
Veronica spuria L.			VU	B1ab(i,iii,iv)																				
	Pseudolysimachion spurium subsp. *foliosum* (Waldst. & Kit.) Holub	M			RE																			
	Pseudolysimachion spurium (L.) Rauschert							VU	B2ab(i,ii,iii,iv)							+								
Veronica triloba (Opiz) Wiesb.	*Veronica triloba* (Opiz) Opiz	A, M	DD		EN	A2ac; B2(i,ii)b(iii,iv)										+								
Veronica urticifolia Jacq.	*Veronica urticifolia* Jacq.		LC		VU	A2ac; B2a(ii)b(ii,iii,iv,v)					VU	B2a; C2a(i)				+			+					
Vicia lutea L.	*Vicia lutea* L.	N	VU	C2a(ii)				VU	C2a(ii)										+			+		
Vicia narbonensis L.	*Vicia narbonensis* L.		CR	B1ab(i)				RE											+					
Vicia sparsiflora Ten.	*Vicia sparsiflora* Ten.		NT		VU	B1a(i)b(iii,iv)				+									+			+		
Vicia sylvatica L.	*Vicia sylvatica* L.		LC				+	VU	A2ac				+			+			+			+		
Vinca herbacea Waldst. & Kit.	*Vinca herbacea* Waldst. & Kit.	M	NT		VU	B1a(ii)b(iii)+B2a(ii)b(iii)				+														
Viola alba Besser	*Viola alba* Besser		NT				+			+	RE			CR	B1ab(iii,iv,v)				+					
Viola alpina Jacq.	*Viola alpina* Jacq.		VU	B2ab(i); D2	VU	B2a(i)b(i); D2(i)							+						+					
Viola ambigua Waldst. & Kit.	*Viola ambigua* Waldst. & Kit.	M	NT		EN	A2ac; B2(ii)b(iii,iv)				+						+			+					
Viola biflora L.	*Viola biflora* L.		LC				+	EN	A3c, d; B2ab (iii)				+			+			+					
Viola dacica Borbás	*Viola dacica* Borbás		LC		VU	B2a(i)b(iii,v); C2a(i); D1+D2(i)							+			+			+					
Viola elatior Fr.	*Viola elatior* Fr.		NT		CR	A2ac; B2a(i)b(ii,iii,iv,v); C2a(ii)		VU	B2ab(i,ii,iii,iv)							+			+			+		
Viola epipsila Ledeb.	*Viola epipsila* Ledeb.		VU	B1ab(iii,v)c(iv)	CR	B2a(ii)b(iii,v)											CR	B2a; B2c(iv)						
Viola grisebachiana Boiss.	*Viola grisebachiana* Vis.	M	VU	B2ab(ii)																VU	B1;D2			
Viola palustris L. subsp. *palustris*	*Viola palustris* L.		LC				+						+			+	CR	B2a; B2c(iii)						
Viola persicifolia Schreb.	*Viola stagnina* KIT.		VU	B1ab(i,iii,iv)				EN	B2ab(i,ii,iii,iv)				+			+			+					

EuroMed name	National name	Character	Carpathians category	Carpathians criteria	SK cat	SK crit	SK pres	HU cat	HU crit	HU pres	PL cat	PL crit	PL pres	UA cat	UA crit	UA pres	RO cat	RO crit	RO pres	RS cat	RS crit	RS pres	CZ cat	CZ crit
Viola pumila Chaix	*Viola pumila* Chaix		NT		EN	A2ac; B2a(ii)b(ii,iii,iv,v)				+						+			+					
Vitis vinifera subsp. *sylvestris* (C. C. Gmel.) Hegi	*Vitis sylvestris* C. C. Gmel.		VU	B1ac(iv)				EN	B2a; B2c(iv)							+			+			+		
Vulpia bromoides (L.) Gray	*Vulpia bromoides* (L.) Gray	M	VU	B1ab(i)	RE											+	EN	B2a; B2c(ii); C2a(i)						
Waldsteinia ternata subsp. *trifolia* (K. Koch) Teppner	*Waldsteinia teppneri* Májovský		CR	B2ab(iii)	CR	B2a(ii)b(iii)																		
Waldsteinia ternata subsp. *trifolia* (K. Koch) Teppner	*Waldsteinia ternata* subsp. *magicii* Májovský		EN	B2ab(ii,iii,v)	EN	B2a(i)b(ii,iii,v)																		
Wolffia arrhiza (L.) Wimm.	*Wolffia arrhiza* (L.) Horkel ex Wimm.		NT							+						+	EN	A2; C2b	+			+		
Woodsia alpina (Bolton) Gray	*Woodsia alpina* (Bolton) Gray		VU	B1ab(iv); D2	VU	D2(i,ii)		RE			CR	B2a; C2a(i)		DD			EN	D						
Woodsia ilvensis (L.) R. Br.	*Woodsia ilvensis* (L.) R. Br.		NT		VU	B1a(i)b(iii)		VU	C1; D1		CR	B2a(i); C2a(i); D		CR	D				+					
Woodsia pulchella Bertol.	*Woodsia glabella* R. Br. subsp. *pulchella* (Bertol.) A. & D. Lowe		EN	C2b													EN	C2b						
Xanthium spinosum L.	*Xanthium spinosum* L.	A, M, N	NT		EN	A2ac; B2a(i,ii)b(iii,iv,v)				+			+			+			+			+		
Xeranthemum cylindraceum Sm.	*Xeranthemum cylindraceum* Sm.	A	NT		VU	A2ac; B2a(i)b(iii,iv,v)c(iv)				+									+			+		

Legend: cat. – category, crit. – criteria, pres. – presence

Table 2: Number of taxa proposed by individual Carpathian countries in the Red List of vascular plants of the Carpathians *(according to status of database http://www.sopsr.sk/symfony-bioregio/botany to August 22nd, 2013).*

Country	Total number of taxa	Number of taxa included into Carpathian Red list
Czech republic	26	26
Hungary	539	321
Poland	198	130
Romania	187	159
Serbia	106	26
Slovakia	1 001	525
Ukraine	195	180

DRAFT CARPATHIAN RED LIST OF MOLLUSCS (MOLLUSCA)

Compiled by Ľubomíra Vavrová

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Background

According to the latest IUCN European Red List of Non-marine Molluscs (Cutellod et al., 2011) in total **854 freshwater molluscs species** (including 748 species endemic to Europe) and **1233 terrestrial molluscs species** (including 1161 species endemic to Europe) were assessed using the IUCN Red List Criteria (IUCN 2001).

Number of Carpathian species per category:
Freshwater molluscs: EX (Extinct) – 5, CR (Critically Endangered) – 109, EN (Endangered) – 90, VU (Vulnerable) – 174, NT (Near Threatened) – 75, LC (Least Concern) – 190, DD (Data Deficient) – 211

Terrestrial molluscs: EX (Extinct) – 3, CR (Critically Endangered) – 53, EN (Endangered) – 51, VU (Vulnerable) – 142, NT (Near Threatened) – 182, LC (Least Concern) – 677, DD (Data Deficient) – 125

The following mollusc species that occur in the Carpathians are listed also in the European list of threatened species (categories EU / EU27):

Theodoxus prevostianus (EN / EN), *Theodoxus transversalis* (EN / EN), *Unio crassus* (VU / VU), *Vertigo angustior* (VU / VU), *Vertigo moulinsiana* (VU / VU), *Agardhiella tuned* (VU / VU), *Bythinella molcsany* (VU / VU), *Xerocampylaea zelebori* (LC / VU).

Executive summary

In total 357 molluscs species occurring in the Carpathians were assessed according to the IUCN Red List Criteria (IUCN 2001). Considering the recent knowledge about the species populations size and trends and their habitat quality 37 taxa in total were classified as threatened. These taxa were classified in the following categories:

CR (1 taxon) - *Theodoxus prevostianus*

EN (6 taxa) – *Alopia maciana*, *Bythinella molcsanyi*, *Quickella arenaria*, *Theodoxus transversalis*, *Unio crassus*, *Valvata macrostoma*

VU (30 taxa) – *Agardhiella tunde*, *Alopia bielzi clathrata*, *A. b. madensis*, *A. meschendorferi*, *A. petrensis*, *A. pomatias*, *Alzoniella slovenica*, *Bythinella calimanica*, *B. viseuiana*, *B. blidariensis*, *B. georgievi*, *B. falniowski*, *B. feheri*, *B. sirbui*, *B. szarowskae*, *Cochlicopa nitens*, *Cochlodina fimbriata remota*, *Faustina cingulella*, *F. rossmässleri*, *Gyraulus rossmässleri*, *Helicigona kiralikoeica*, *Petasina filicina*, *Pisidium moitessierianum*, *P. pseudosphaerium*, *P. tenuilineatum*, *Pseudanodonta complanata*, *Pupilla sterrii*, *Terrestribythinella baidashnikovi*, *Theodoxus danubialis*, *Troglovitrea argintarui*

In total 46 taxa are considered as endemic to the Carpathians. In total 9 taxa are of the European Importance and are listed in Annexes of the Habitats Directive.

Annex II – *Vertigo angustior*, *V. geyeri*, *V. moulinsiana*
Annex IV – *Theodoxus prevostianus*
Annex II and **Annex IV** – *Anisus vorticulus*, *Bythinella pannonica*, *Drobacia banatica*, *Theodoxus transversalis*, *Unio crassus*

Bithynia leachii is classified as DD (Data Deficient) due to the fact that in the past the species was confused with *B. troschelii*. Although there is *Oxyloma dunkeri* included in the list and classified as LC, it is not confirmed that this species occurs in the Carpathians. *Spelaeodiscus triarius* needs taxonomic revision and therefore is classified as DD.

There were several factors that have impact on the final classification of the species status in the Carpathians. The most important factor was lack of recent data on molluscs occurrence in the Carpathians and lack of experts to consult the species status at the national level. To overcome these difficulties personal records of authors and their expert opinion were applied in classification of species with absent data. Therefore the presented Red List of Molluscs for Carpathians needs to be considered as a draft list. To elaborate a list based on scientific knowledge it is necessary to focus on research and data collecting. It is also necessary to train national experts on application of the IUCN Red List Criteria to ensure that species classification at national level will be comparable for all relevant countries.

Assessment methodology

Standard methodology for application of the IUCN Red List Criteria (IUCN 2001) at regional level was used for the species classification.
Based on the available data a list of the Carpathian molluscs was elaborated. The list was consulted with experts from the region. For the assessment the following rules were set up:

- all species with confirmed occurrence in the Carpathians were classified;
- invasive and non-native species were not classified;
- subspecies were classified only exceptionally;
- if no published data available an expert opinion and personal database (if existing) were used for the species assessment.

There were complications in application of the IUCN methodology at national level. For the future assessment it is necessary to secure that the same methodology is correctly applied at national levels and that the data are comparable. This can be done through a training of national experts on using the IUCN methodology.

Taxonomic scope / Habitats categorisation

On the list there are 24 species that are not listed in Fauna Europea. In addition to that a note on the species synonym is included for 9 species.

Major threats

Main threats to mollusc species in the Carpathians are:

- logging and removing of dead wood from forests (threatened are mainly species strictly or very much bound to forests, e.g. *Cochlodina fimbriata remota*, *Faustina rossmässleri*;
- changes in character of water bodies and sediments (main threat to *Theodoxus transversalis*, *T. danubialis*, *T. prevostianus*, *Unio crassus*);
- degradation of wetlands (e.g. *Cochlicopa nitens*);
- degradation of specific habitats, e.g. springs (genus *Bythinella* sp.).

Conservation/conservation management

It is very important to regularly monitor the species, their population size and trends as well as quality of their habitats. Priority should be given to species classified as threatened (category CR, EN, and VU) and those of the European and national importance.
As mentioned above the presented list is a draft based on recently available data and knowledge that are in many cases not sufficient for objective assessment. Future research should be focused also on collecting data necessary for the species classification according to the IUCN Red List Criteria. Overview of the status of molluscs of the Carpathians is in Table 1.

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Table 1: Overview of the status of molluscs of the Carpathians

Taxon	Category	Criteria	Endemic to Carpathians	Habitats Directive	Bern Convention	Note
Abida secale secale (Draparnaud, 1801)	DD					
Acanthinula aculeata (O.F. Muller, 1774)	LC					
Acicula parcelineata (Clessin, 1911)	LC					
Acroloxus lacustris (Linnaeus, 1758)	LC					
Aegopinella epipedostoma (Fagot, 1879)	NT					
Aegopinella minor (Stabile, 1864)	LC					
Aegopinella nitens (Michaud, 1831)	LC					
Aegopinella pura (Alder, 1830)	LC					
Agardhiella parreyssii armata (Clessin, 1887)	LC					
Agardhiella banatica (Zilch, 1958)	NT		YES			
Agardhiella parreyssii caesa (Westerlund, 1876)	LC					
Agardhiella crassilabris (Grossu & Negrea, 1968)	NT		YES			
Agardhiella domokosi Subai, 2011	LC					
Agardhiella grossui (Zilch, 1958)	NT		YES			
Agardhiella incerta Grossu, 1987	LC					
Agardhiella lamellata (Clessin, 1887)	LC					
Agardhiella reinhardti (Zilch, 1958)	NT		YES			
Agardhiella serbica Subai, 2011	NT					
Agardhiella tunde Deli, 2010	VU	D2	YES			
Alinda (Alinda) biplicata (Montagu, 1803)	LC					
Alinda (Pseudalinda) stabilis (L. Pfeiffer, 1847)	LC					
Alopia (Alopia) bielzii (L. Pfeiffer, 1849)	LC					
Alopia (Alopia) bielzii bielzii (L. Pfeiffer, 1849)	LC		YES			
Alopia (Alopia) bielzii clathrata (E.A. Bielz, 1856)	VU		YES			
Alopia (Alopia) bielzii madensis (C. Fuss, 1855)	VU		YES			
Alopia (Alopia) bielzii tenuis (E.A. Bielz, 1861)	DD		YES			
Alopia (Alopia) bogatensis (E.A. Bielz, 1856)	NT		YES			
Alopia (Alopia) canescens M. von Kimakowicz, 1883	LC		YES			
Alopia (Alopia) fussi (M. von Kimakowicz, 1894)	NT		YES			
Alopia glauca (Bielz, 1853)	NT		YES			
Alopia (Alopia) glorifica (Charpentier, 1852)	LC		YES			
Alopia (Alopia) helenae R. von Kimakowicz, 1928	LC		YES			
Alopia (Alopia) hildegardae R. von Kimakowicz, 1931	NT		YES			
Alopia (Alopia) lischkeana (Charpentier, 1852)	LC		YES			
Alopia (Alopia) livida (Menke, 1828)	LC		YES			
Alopia maciana Badarau & Szekeres, 2001	EN	B2aC(iv)				
Alopia (Alopia) meschendorferi (E.A. Bielz, 1858)	VU	D2	YES			
Alopia (Alopia) nefasta (M. von Kimakowicz, 1894)	NT		YES			
Alopia (Alopia) nixa (M. von Kimakowicz, 1894)	NT		YES			synonym Alopia fussi
Alopia petrensis Nordsieck, 1996	VU	D2				
Alopia (Alopia) plumbea (Rossmässler, 1839)	LC		YES			
Alopia soosiana Agócsy & Pócs, 1961	DD		YES			
Alopia (Alopia) straminicollis (Charpentier, 1852)	LC		YES			
Alopia (Alopia) subcosticollis (A. Schmidt, 1858)	LC		YES			
Alopia (Alopia) zagani Szekeres, 1969	DD		YES			

Taxon	Category	Criteria	Endemic to Carpathians	Habitats Directive	Bern Convention	Note
Alopia (Kimakowiczia) glauca (E.A. Bielz, 1853)	NT					
Alopia (Kimakowiczia) pomatias (L. Pfeiffer, 1868)	VU	B2ac(i)(iii)				synonym Alopia cyclostoma
Alzoniella (Alzoniella) slovenica (Lozek & Brtek, 1964)	VU					
Ancylus fluviatilis O.F. Muller, 1774	LC					
Anisus (Anisus) leucostoma (Millet, 1813)	LC					
Anisus (Anisus) septemgyratus (Rossmassler, 1835)	NT					
Anisus (Anisus) spirorbis (Linnaeus, 1758)	LC					
Anisus (Disculifer) vortex (Linnaeus, 1758)	LC					
Anisus (Disculifer) vorticulus (Troschel, 1834)	DD			II, IV		
Anodonta anatina (Linnaeus, 1758)	NT					
Anodonta cygnea (Linnaeus, 1758)	NT					
Aplexa hypnorum (Linnaeus, 1758)	LC					
Argna bielzi (Rossmassler, 1859)	LC					
Arianta aethiops aethiops (M. Bielz, 1851)	LC		YES			
Arianta arbustorum (Linnaeus, 1758)	LC					
Arianta hessei (M. von Kimakowicz, 1883)	NT		YES			
Arion (Arion) lusitanicus J. Mabille, 1868	LC					synonym Arion vulgare
Arion (Arion) rufus (Linnaeus, 1758)	LC					
Arion (Carinarion) circumscriptus Johnston, 1828	LC					
Arion (Carinarion) fasciatus (Nilsson, 1823)	LC					
Arion hortensis Férussac, 1819	LC					
Arion (Carinarion) silvaticus Lohmander, 1937	LC					
Arion (Kobeltia) distinctus J. Mabille, 1868	LC					
Arion (Mesarion) fuscus (O.F. Muller, 1774)	LC					
Balea fallax (Rossmässler, 1836)	LC					
Balea jugularis (Vest, 1859)	LC					
Balea perversa (Linnaeus, 1758)	LC					
Balea viridana (Rossmässler, 1836)	LC					
Bathyomphalus contortus (Linnaeus, 1758)	LC					
Bielzia coerulans (M. Bielz, 1851)	LC		YES			
Bithynia leachii (Sheppard, 1823)	DD					in the past very often confused with Bithynia troschelii
Bithynia tentaculata (Linnaeus, 1758)	LC					
Bithynia troschelii (Paasch, 1842)	DD					
Boettgerilla pallens Simroth, 1912	LC					
Borysthenia naticina (Menke, 1845)	DD					
Bulgarica (Strigilecula) cana (Held, 1836)	LC					
Bulgarica rugicollis (Rossmässler, 1836)	LC					
Bulgarica vetusta (Rossmässler, 1836)	LC					
Bythinella austriaca (Frauenfeld, 1857)	LC					
Bythinella calimanica Falniowski, Szarowska & Sirbu, 2009	VU	D2	YES			

Taxon	Category	Criteria	Endemic to Carpathians	Habitats Directive	Bern Convention	Note
Bythinella dacica Grossu, 1946	NT		YES			
Bythinella grossui Falniowski, Szarowska & Sirbu, 2009	NT		YES			
Bythinella molcsanyi H. Wagner, 1941	EN	B2ab(iii)	YES			
Bythinella pannonica (Frauenfeld, 1865)	LC			II, IV		
Bythinella radomanii Falniowski, Szarowska & Sirbu, 2009	NT		YES			
Bythinella viseuiana Falniowski, Szarowska & Sirbu, 2009	VU	D2	YES			
Bythinella blidariensis Gloer, 2013	VU	D2	YES			
Bythinella georgievi Gloer, 2013	VU	D2	YES			
Bythinella falniowskii Gloer, 2013	VU	D2	YES			
Bythinella feheri Gloer, 2013	VU	D2	YES			
Bythinella sirbui Gloer, 2013	VU	D2	YES			
Bythinella szarowskae Gloer, 2013	VU	D2	YES			
Candidula unifasciata (Poiret, 1801)	DD					
Carpathica (Carpathica) calophana (Westerlund, 1881)	NT		YES			
Carpathica stussineri (A.J.Wagner, 1895)	DD					
Carychium (Carychium) minimum O.F. Muller, 1774	LC					
Carychium (Saraphia) tridentatum (Risso, 1826)	LC					
Causa holosericea (S. Studer, 1820)	NT					
Cecilioides (Cecilioides) acicula (O.F. Muller, 1774)	LC					
Cecilioides (Cecilioides) petitiana (Benoit, 1862)	DD					
Cellariopsis deubeli (A.J. Wagner, 1914)	LC					
Cepaea (Austrotachea) vindobonensis (C. Pfeiffer, 1828)	LC					
Cepaea (Cepaea) hortensis (O.F. Muller, 1774)	LC					
Cepaea (Cepaea) nemoralis (Linnaeus, 1758)	LC					
Clausilia (Andraea) dubia Draparnaud, 1805	LC					
Clausilia (Clausilia) cruciata (S. Studer, 1820)	LC					
Clausilia (Clausilia) pumila C. Pfeiffer, 1828	LC					
Clausilia (Clausilia) rugosa parvula A. Ferussac, 1807	LC					
Cochlicopa lubrica (O.F. Muller, 1774)	LC					
Cochlicopa lubricella (Rossmassler, 1834)	LC					
Cochlicopa nitens (M. von Gallenstein, 1848)	VU	B2ab(iii)				
Cochlodina (Cochlodina) laminata (Montagu, 1803)	LC					
Cochlodina (Paracochlodina) marisi (A. Schmidt, 1868)	LC					
Cochlodina (Paracochlodina) cerata (Rossmassler, 1836)	LC					
Cochlodina (Paracochlodina) orthostoma (Menke, 1828)	LC					
Cochlodina (Stabilea) fimbriata remota Lozek, 1952	VU	D2				
Columella aspera Walden, 1966	DD					

Taxon	Category	Criteria	Endemic to Carpathians	Habitats Directive	Bern Convention	Note
Columella columella (G. von Martens, 1830)	NT					
Columella edentula (Draparnaud, 1805)	LC					
Corbicula fluminalis (O. F. Muller, 1774)	LC					
Daudebardia (Daudebardia) brevipes (Draparnaud, 1805)	LC					
Daudebardia langi (Pfeiffer, 1846)	DD					
Daudebardia nana (Grossu, 1969)	DD					
Daudebardia (Daudebardia) rufa (Draparnaud, 1805)	LC					synonym D. cavicola
Deroceras (Deroceras) agreste (Linnaeus, 1758)	LC					
Deroceras (Liolytopelte) bureschi (H. Wagner, 1934)	DD					
Deroceras (Deroceras) laeve (O.F. Muller, 1774)	LC					
Deroceras occidentale (Grossu & Lupu, 1966)	DD					
Deroceras (Deroceras) praecox Wiktor, 1966	LC					
Deroceras (Deroceras) reticulatum (O.F. Muller, 1774)	LC					
Deroceras (Deroceras) rodnae Grossu & Lupu, 1965	LC					
Deroceras (Deroceras) sturanyi (Simroth, 1894)	LC					
Deroceras (Deroceras) turcicum (Simroth, 1894)	LC					
Deroceras zilchi Grossu, 1969	DD					
Deroceras (Liolytopelte) moldavicum (Grossu & Lupu, 1961)	LC					
Discus (Discus) ruderatus (W. Hartmann, 1821)	LC					
Discus (Gonyodiscus) perspectivus (Megerle von Muhlfeld, 1816)	LC					
Discus (Gonyodiscus) rotundatus (O.F. Muller, 1774)	LC					
Drobacia banatica (Rossmassler, 1838)	LC			II, IV		
Ena montana (Draparnaud, 1801)	LC					
Fagotia esperi (A. Férussac, 1823)	NT					
Eucobresia diaphana (Draparnaud, 1805)	DD					
Eucobresia nivalis (Dumont & Mortillet, 1854)	DD					
Euconulus (Euconulus) fulvus (O.F. Muller, 1774)	LC					
Euconulus (Euconulus) praticola (Reinhardt, 1883)	LC					
Euomphalia strigella (Draparnaud, 1801)	LC					
Faustina cingulella (Rossmassler, 1837)	VU	B1ab(iii)+2ab(iii)				
Faustina faustina (Rossmassler, 1835)	LC					
Faustina rossmaessleri (L. Pfeiffer, 1842)	VU	B1ab(iii)+2ab(iii)				
Fruticicola fruticum (O.F. Muller, 1774)	LC					
Galba (Galba) truncatula (O.F. Muller, 1774)	LC					
Graciliaria inserta (A. & J.B. Villa, 1841)	DD					
Granaria frumentum (Draparnaud, 1801)	LC					
Gyraulus acronicus (A. Férussac, 1807)	DD					
Gyraulus (Armiger) crista (Linnaeus, 1758)	LC					
Gyraulus (Gyraulus) albus (O.F. Muller, 1774)	LC					
Gyraulus (Lamorbis) rossmaessleri (Auerswald, 1852)	VU	B2ab(iii)				
Gyraulus (Torquis) laevis (Alder, 1838)	LC					
Gyraulus riparius (Westerlund, 1865)	DD					

Taxon	Category	Criteria	Endemic to Carpathians	Habitats Directive	Bern Convention	Note
Helicigona balcanica (Kobelt, 1875)	DD					
Helicigona kiralikoeica (Kimakowicz, 1890)	VU	D2	YES			
Helicigona kollari (Pfeiffer, 1856)	DD					
Helicigona trizona (Rossmässler, 1834)	LC					
Helicodonta obvoluta (O.F. Muller, 1774)	LC					
Helicopsis cereoflava (M. Bielz, 1851)	LC					
Helicopsis instabilis (Rossmässler, 1838)	LC					
Helicopsis striata (Müller, 1774)	NT					
Helix lucorum Linnaeus, 1758	LC					
Helix (Helix) lutescens Rossmassler, 1837	LC					
Helix (Helix) pomatia Linnaeus, 1758	LC				III	
Herilla ziegleri (Kuster, 1845)	NT					
Hippeutis complanatus (Linnaeus, 1758)	LC					
Amphimelania holandrii (C. Pfeiffer, 1828)	NT					synonym Holandriana holandrii
Chondrina arcadica clienta (Westerlund, 1883)	LC					
Chondrina tatrica Lozek, 1948	NT					
Mastus bielzi (M. von Kimakowicz, 1890)	LC					synonym Chondrula bielzi
Chondrula tridens (O.F. Muller, 1774)	LC					
Isognomostoma isognomostomos (Schroter, 1784)	LC					
Kovacsia kovacsi (Varga & L. Pinter, 1972)	LC					
Laciniaria plicata (Draparnaud, 1801)	LC					
Laciniaria pseudostabilis (Westerlund, 1901)	DD					
Lehmannia horezia Grossu & Lupu, 1962	DD		YES			
Lehmannia jaroslaviae Grossu, 1967	DD					
Lehmannia macroflagellata Grossu & Lupu, 1962	NT					
Lehmannia marginata (O.F. Muller, 1774)	LC					
Lehmannia medioflagellata Lupu, 1968	DD					
Lehmannia nyctelia (Bourguignat, 1861)	LC					
Lehmannia valentiana (Férussac, 1822)	DD					
Lehmannia vrancensis Lupu, 1973	DD					
Limacus flavus (Linnaeus, 1758)	LC					
Limax cinereoniger Wolf, 1803	LC					
Limax maximus Linnaeus, 1758	LC					
Lithoglyphus naticoides (C. Pfeiffer, 1828)	LC					
Lozekia deubeli (M. von Kimakowicz, 1890)	LC					
Lozekia transsylvanica (Westerlund, 1876)	LC					
Lymnaea stagnalis (Linnaeus, 1758)	LC					
Macedonica frauenfeldi (Rossmässler, 1856)	LC					
Macedonica marginata (Rossmässler, 1835)	LC					
Macrogastra (Macrogastra) ventricosa (Draparnaud, 1801)	LC					
Macrogastra (Pyrostoma) borealis (O. Boettger, 1878)	LC					
Macrogastra (Pyrostoma) borealis bielzi H. Nordsieck, 1993	LC					

Taxon	Category	Criteria	Endemic to Carpathians	Habitats Directive	Bern Convention	Note
Macrogastra (Pyrostoma) plicatula (Draparnaud, 1801)	LC					
Macrogastra (Pyrostoma) tumida (Rossmassler, 1836)	LC					
Malacolimax tenellus (O.F. Muller, 1774)	LC					
Mastus transsylvanicus M. von Kimakowicz, 1883	LC					
Mastus venerabilis (L. Pfeiffer, 1855)	LC					
Mediterranea depressa (Sterki, 1880)	LC					
Mediterranea inopinata (Ulicny, 1887)	LC					
Merdigera obscura (O.F. Muller, 1774)	LC					
Fagotia (Microcolpia) daudebartii (Prevost, 1821)	NT					synonym Esperiana daudebartii
Monacha (Monacha) cartusiana (O.F. Muller, 1774)	LC					
Monachoides incarnatus (O.F. Muller, 1774)	LC					
Monachoides vicinus (Rossmassler, 1842)	LC					
Morlina glabra (Rossmassler, 1835)	LC					
Musculium lacustre (O. F. Muller, 1774)	LC					
Nesovitrea (Perpolita) hammonis (Strom, 1765)	LC					
Nesovitrea (Perpolita) petronella (L. Pfeiffer, 1853)	NT					
Oligolimax annularis (S. Studer, 1820)	LC					
Orcula dolium (Draparnaud, 1801)	LC					
Orcula jetschini M. von Kimakowicz, 1883	LC					
Oxychilus (Oxychilus) cellarius (O.F. Muller, 1774)	LC					
Oxychilus (Oxychilus) draparnaudi (H. Beck, 1837)	LC					
Schistophallus (Schistophallus) oscari (M. von Kimakowicz, 1883)	DD					
Oxyloma (Oxyloma) elegans (Risso, 1826)	LC					
Oxyloma dunkeri (Pfeiffer, 1865)	LC					
Pagodulina pagodula (Des Moulins, 1830)	DD					
Perforatella bidentata (Gmelin, 1791)	LC					
Perforatella dibothrion (M. von Kimakowicz, 1884)	LC					
Petasina (Edentiella) bakowskii (Polinski, 1924)	LC					
Petasina (Filicinella) bielzi (E.A. Bielz, 1859)	LC					synonym Trochulus bielzi
Petasina (Filicinella) filicina (L. Pfeiffer, 1841)	VU	D2				
Petasina (Petasina) unidentata (Draparnaud, 1805)	LC					
Physa fontinalis (Linnaeus, 1758)	NT					
Pisidium amnicum (O. F. Muller, 1774)	NT					
Pisidium casertanum (Poli, 1791)	LC					
Pisidium globulare Westerlund, 1873	DD					
Pisidium henslowanum (Sheppard, 1823)	LC					
Pisidium hibernicum Westerlund, 1894	LC					
Pisidium milium Held, 1836	LC					
Pisidium moitessierianum Paladilhe, 1866	VU	B2ab(iii)				
Pisidium nitidum Jenyns, 1832	LC					
Pisidium obtusale (Lamarck, 1818)	LC					
Pisidium personatum Malm, 1855	LC					
Pisidium pseudosphaerium J. Favre, 1927	VU	D2				

Taxon	Category	Criteria	Endemic to Carpathians	Habitats Directive	Bern Convention	Note
Pisidium pulchellum Jenyns, 1832	DD					
Pisidium subtruncatum Malm, 1855	LC					
Pisidium supinum A. Schmidt, 1851	LC					
Pisidium tenuilineatum Stelfox, 1918	VU	D2				
Planorbarius corneus (Linnaeus, 1758)	LC					
Planorbis (Planorbis) carinatus O.F. Muller, 1774	LC					
Planorbis (Planorbis) planorbis (Linnaeus, 1758)	LC					
Platyla banatica (Rossmässler, 1842)	LC					
Platyla microsphira (Pini, 1884)	DD					
Platyla perpusilla (Reinhardt, 1880)	LC					
Platyla polita (W. Hartmann, 1840)	LC					
Platyla similis (Reinhardt, 1880)	LC					
Pomatias rivularis (Eichwald, 1829)	LC					
Prostenomphalia carpathica Baidashnikov, 1985	DD					
Pseudanodonta complanata (Rossmassler, 1835)	VU	A2ace+A4ace				
Pseudofusulus varians (C. Pfeiffer, 1828)	NT					
Pseudotrichia rubiginosa (Rossmassler, 1838)	LC					
Punctum (Punctum) pygmaeum (Draparnaud, 1801)	LC					
Pupilla (Pupilla) alpicola (Charpentier, 1837)	LC					
Pupilla (Pupilla) bigranata (Rossmassler, 1839)	LC					
Pupilla (Pupilla) muscorum (Linnaeus, 1758)	LC					
Pupilla pratensis (Clessin, 1871)	DD					
Pupilla (Pupilla) sterrii (Voith, 1840)	VU	B1a(i)b(iii)				
Pupilla (Pupilla) triplicata (S. Studer, 1820)	LC					
Pyramidula pusilla (Vallot, 1801)	LC					
Quickella arenaria (Potiez & Michaud, 1835)	EN	B1+2ab(iii)				
Radix ampla (W. Hartmann, 1821)	LC					
Radix auricularia (Linnaeus, 1758)	LC					
Radix balthica (Linnaeus, 1758)	LC					
Radix labiata (Rossmassler, 1835)	LC					
Ruthenica filograna (Rossmassler, 1836)	LC					
Ruthenica gallinae (E. A. Bielz, 1861)	DD					
Segmentina nitida (O.F. Muller, 1774)	LC					
Semilimacella bonelli (Targioni Tozzetti, 1873)	LC					
Semilimax kotulae (Westerlund, 1883)	NT					
Semilimax semilimax (J. Ferussac, 1802)	LC					
Soosia diodonta (A. Ferussac, 1821)	NT					
Spelaeodiscus triarius (Rossmässler, 1839)	DD					taxon revision is needed
Spelaeodiscus (Aspasita) triarius tatricus (Hazay, 1883)	DD					taxon revision is needed
Sphaerium corneum (Linnaeus, 1758)	LC					
Sphaerium nucleus (Studer, 1820)	DD					
Sphaerium ovale (A. Férussac, 1807)	LC					
Sphaerium rivicola (Lamarck, 1818)	NT					
Sphyradium doliolum (Bruguiere, 1792)	LC					
Stagnicola corvus (Gmelin, 1791)	LC					

Taxon	Category	Criteria	Endemic to Carpathians	Habitats Directive	Bern Convention	Note
Stagnicola palustris (O.F. Muller, 1774)	LC					
Succinea putris (Linnaeus, 1758)	LC					
Succinella oblonga (Draparnaud, 1801)	LC					
Tandonia budapestensis (Hazay, 1880)	LC					
Tandonia rustica (Millet, 1843)	DD					
Terrestribythinella baidashnikovi Sitnokova, Starobogatov & V. Anistratenko, 1992	VU	D2				
Theodoxus danubialis (Pfeiffer, 1828)	VU	B2b(i,iii,iv,v)				
Theodoxus fluviatilis (Linnaeus, 1758)	LC					
Theodoxus prevostianus (Pfeiffer, 1828)	CR	A4,B1, B2ab(iii,iv)		IV		
Theodoxus (Theodoxus) transversalis (C. Pfeiffer, 1828)	EN	B2ab(iii)		II, IV		
Troglovitrea argintarui Negrea & Riedel, 1968	VU	D2	YES			
Trochulus bielzi (A. Schmidt, 1860)	LC					
Trochulus (Plicuteria) lubomirskii (Slosarski, 1881)	LC					
Trochulus (Trochulus) hispidus (Linnaeus, 1758)	LC					
Trochulus (Trochulus) striolatus danubialis (Clessin, 1874)	LC					
Trochulus (Trochulus) villosulus (Rossmassler, 1838)	LC					
Truncatellina callicratis (Scacchi, 1833)	DD					
Truncatellina claustralis (Gredler, 1856)	LC					
Truncatellina costulata (Nilsson, 1823)	NT					
Truncatellina cylindrica (A. Ferussac, 1807)	LC					
Truncatellina opisthodon (Reinhardt, 1879)	DD		YES			
Unio crassus Philipson, 1788	EN	A2ace		II, IV		
Unio pictorum (Linnaeus, 1758)	LC					
Unio tumidus Philipson, 1788	NT					
Urticicola umbrosus (C. Pfeiffer, 1828)	LC					
Vallonia costata (O.F. Muller, 1774)	LC					
Vallonia declivis Sterki, 1893	DD					
Vallonia enniensis (Gredler, 1856)	NT					
Vallonia excentrica Sterki, 1893	LC					
Vallonia pulchella (O.F. Muller, 1774)	LC					
Valvata (Cincinna) piscinalis (O.F. Muller, 1774)	LC					
Valvata (Tropidina) macrostoma Morch, 1864	EN	B2ab(iii, iv)				
Valvata (Valvata) cristata O.F. Muller, 1774	LC					
Vertigo (Vertigo) alpestris Alder, 1838	LC					
Vertigo (Vertigo) antivertigo (Draparnaud, 1801)	LC					
Vertigo (Vertigo) geyeri Lindholm, 1925	NT				II	
Vertigo (Vertigo) modesta arctica (Wallenberg, 1858)	LC					
Vertigo (Vertigo) moulinsiana (Dupuy, 1849)	NT				II	
Vertigo (Vertigo) pusilla O.F. Muller, 1774	LC					
Vertigo (Vertigo) pygmaea (Draparnaud, 1801)	LC					
Vertigo (Vertigo) substriata (Jeffreys, 1833)	LC					
Vertigo (Vertilla) angustior Jeffreys, 1830	LC				II	
Vestia (Vestia) elata (Rossmassler, 1836)	LC					
Vestia (Vestia) gulo (E.A. Bielz, 1859)	LC					
Vestia (Vestia) turgida (Rossmassler, 1836)	LC					
Vitrea botterii (L. Pfeiffer, 1853)	LC					
Vitrea contracta (Westerlund, 1871)	LC					
Vitrea crystallina (O.F. Muller, 1774)	LC					
Vitrea diaphana (S. Studer, 1820)	LC					
Vitrea erjaveci (Brusina, 1870)	LC					synonym Vitrea diaphana erjaveci
Vitrea jetschini (Kimakowicz, 1890)	LC					
Vitrea subcarinata (Clessin, 1877)	LC					
Vitrea subrimata (Reinhardt, 1871)	LC					
Vitrea szekeresi Deli & Subai, 2011	LC					
Vitrea transsylvanica (Clessin, 1877)	LC					
Vitrina pellucida (O.F. Muller, 1774)	LC					
Viviparus acerosus Bourguignat, 1862	LC					
Viviparus contectus (Millet, 1813)	LC					
Viviparus viviparus (Linnaeus, 1758)	LC					
Xerocampylaea zelebori (Pfeiffer, 1853)	LC					
Xerolenta obvia (Menke, 1828)	LC					
Zebrina detrita (O.F. Muller, 1774)	LC					
Zonitoides (Zonitoides) nitidus (O.F. Muller, 1774)	LC					

RED LIST OF SPIDERS (ARANEAE) OF THE CARPATHIAN MTS.

Compiled by Peter Gajdoš (Slovakia)

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Introduction

Spiders, as an integral part of global biodiversity, are very important component of almost all ecosystems where they play many important roles as predators and sources of food for other creatures. Spiders as a group are used as bio-indicators of environmental quality or in rapid biodiversity measurement. Many spider species are dependent on original natural ecosystems and their primary threat is habitat loss and degradation caused mainly by human activities and factors as urban development, land-use management, pollution, introduction of alien species, collection in some cases, etc. There are also groups of spiders which are threatened; however, data on their species are very poor or absolutely missing. In spite of above mentioned facts, spiders receive relatively little attention from the conservation community. Considering the high diversity of species presented by 44 450 described species in the world (Platnick 2014), only 32 spider species are listed in global Red List of IUCN (IUCN 2013) and only 1 of them lives in the Carpathians (*Dolomedes plantarius* VU).

Red list assessments of the European spider fauna with 4 913 described species (Helsdingen 2013) are not elaborated yet and only Red lists of some European countries are published. Considering Carpathian countries, the Red Lists exist in the Czech Republic (Buchar, Růžička 2002 and 2005), Poland (Staręga *at al.* 2002), and Slovakia (Gajdoš, Svatoň 1993, Gajdoš *et al.* 1999 and Gajdoš, Svatoň 2001). There also is the Red Book of Ukraine Carpathians with one spider Carpathonesticus galotshkai red listed (Evtushenko 2011) and the red book of former Czechoslovakia with 30 listed spider species (Buchar 1992). Few species have a legal protection safeguarded; in Hungary (15 species, only one from Carpathians), in Poland (7 species, including four found in Carpathian Mts.) and Slovakia (15 species, 13 from Carpathians). Considering the whole Carpathian Mountains, there is only the Carpathian List of Endangered Species (Witkowski *et al.* 2003) which includes spiders very marginally. It lists only 17 species in total and with many incorrect data.

Methods of Assessments

The following four steps were used to process the existing data on spider species (class Arachnida: order Araneae) present in the Carpathian region in Czech Republic, Hungary, Poland, Ukraine, Romania, Serbia and Slovakia:

1. Documenting spider fauna in the studied Carpathian Mts. Any data available were used, literature sources (see literature), spider collections in museums, individually owned databases and also own unpublished data. (In order to find out whether the species belongs to the Carpathians, an intersection of GIS layer of orographic units and a point GIS layer of studied sites was carried out.)
2. Preparing the national Carpathian Red Lists by experts from individual Carpathian countries. All the spider species recorded in the Carpathian part of individual countries were evaluated according to the IUCN criteria (IUCN 2013) and classified as Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC) and Data deficient (DD).
3. Uploading of data in the specifically designed online database for the purposes of BioREGIO Carpathians project. National data were entered into database as well as submitted in an Microsoft Excel spreadsheet.
4. Preparing the whole Carpathian Red List. All the 1 067 spider species documented in the Carpathian orogeographic units were evaluated according to the listing in the national red lists, taking into consideration the IUCN criteria for higher (Carpathian) level. The taxa in categories VU, EN, CR, RE, were selected as a basis for elaboration of the draft Carpathian Red List. Final categorisation (VU, EN, CR, RE) of the threatened species on Carpathian level was done on the basis of common consultations and discussions of the project partners. Check list and also Red List of the Serbian Carpathians was developed based on data from a monograph "The spiders of Serbia" (Deltshev *et al.* 2003).

For project purposes, the species nomenclature of Fauna Europaea was used. As this nomenclature does not accept new trends in taxonomy, the Platnick nomenclature (2014) - version 14.5 is listed in the Table 1. as well. Some species were synonymised (brown highlighted row).
The aim was to provide a baseline dataset and information describing the conservation status of the species from the order Araneae occurring in the Carpathian Mts. in seven Carpathian countries and which can be used for conservation purposes on local as well as regional level.

Results

Altogether 1 067 spider taxa (ca 21.72% of 4 913 European species) were found in seven Carpathian countries (CZ, HU, PL, RO, RS, SK, UA). The level of knowledge on spiders in individual Carpathian countries is different. The best data are from Slovakia (the SK Carpathian dataset listed more than 95 thousands spider records from about 4000 localities and from 85 orographic units, Slovakian Carpathians are divided into 86 orographic units). The highest richness of spider fauna is documented from Slovak, Czech, Romanian and Poland Carpathians (929, 671, 619 and 570 species, respectively). 386 species were recorded in the Ukrainian Carpathian Mountains. There are less data available from Hungarian and Serbian Carpathians (182 and 203 species). In summary, the following numbers of taxa were listed under the categories RE?, CR, EN, and VU in the National Red Lists: 0 (HU), 14 (UA), 15 (RS), 25 (RO), 86 (PL), 170 (CZ) and 200 species (SK) (Table 1).

Altogether 185 species (from 1 067 assessed) were included in the Carpathian Red List in categories VU, EN, CR, RE?. Out of them, 129 threatened species are listed in category VU, 43 species in category EN, 8 species in category CR and 5 species in category RE? (not recorded for more than 50 years), Table 1, 2.

Endemism of Araneae in the Carpathians

Altogether 49 endemic species were found in the Carpathians (4.59% of 1 067) (Table 1). The majority of "endemic species" is concentrated in Romania (41 species), many of them are East Carpathian endemic species. From habitat type point of view, many endemic species in the Carpathians occur in underground habitats, namely in caves, mining tunnels, etc. In Western Carpathians a few endemic species live in subalpine zone of the High Tatras Mts. (e.g. *Mecynargus longus*, *Mughiphantes varians*, *Walckenaeria suspecta*, etc). In Romania, the Carpathian endemic species are mostly the representatives of two families: Nesticidae and Linyphiidae, the list being completed by a locally distributed subspecies of *Nemesia* (Nemesiidae). The Nesticidae are highly specialized cave inhabitants (*Nesticus* and *Carpathonesticus*) that seem to be separated in different mountain ranges by geographical isolation and also by minute differences in ecological preferences (Duț & Duma 2013). That concerns the following genera especially: 11 *Carpathonesticus* species and 9 *Nesticus* species (Platnick 2014), the South Carpathians appear to be their speciation centre. The Linyphiidae are represented by 18 species, most of them forest dwellers, a few cave dwellers (*Troglohyphantes*) and also species of the high mountains like *Tenuiphantes fogarasensis* (Weiss, 1986). Around half of them are data deficient, needing sustained further research into their biology and ecology. There is also one species with doubtful existence: *Ceratinella marcui* Rosca, 1932 that was not found after its description and whose type specimens are missing. The most recently described endemic Linyphiid spider is *Scutpelecopsis loricata* Duma & Tanasevitch, 2011, known to exist only in a very small area. Two populations appear to have been sampled, the distance between the points being of approximately 27 km. Other endemic subspecies from family Nemesiidae *Nemesia pannonica coheni* Fuhn & Polenec, 1967 is a rare and little known Mediterranean soil dweller that has been

Table 1: Number of species recorded in the Carpathians in individual countries and number of species recorded in national and whole-Carpathian Red Lists

	CZ	HU	PL	RO	SK	RS	UA	Carp.
Species	671	180+1+?	568+2	601+18	903+26	193+10	383+3	1042+25
Species total	671	181	570	619	929	203	386	1067
RE?	3				13		1	5
CR	28		20		27	1		8
EN	73		35	1	68	9	3	43
VU	66		31	24	94	5	10	129
Total	170	0	86	25	200	15	14	185
DD	44			49	54	29	47	63
LC	9	174	33	277	28		5	95
NT	63	7		13	72		14	118
NE					5			
Total	286	181	119	364	361	44	80	461

found in the warm habitats of the mountains around the Danube's gorges.

All these species are in need of further in-depth research into their habits and of efficient long term management of the natural habitats in the area that they occur in, in order to increase the long term residence of the species; habitat conservation is a "sine qua non" condition for protecting valuable taxa, even more so when their biology is mostly unknown. Special attention should be given to the scientific exploration of the underground environments in the Carpathians, there being a good possibility of new scientific findings and care should be given to any proposal of development of tourism infrastructure in the caves in the area in order not to modify or destroy valuable and vulnerable habitats.

Main threats

For most of the red listed species:
- Habitat loss/degradation (afforestation of many forest areas, decreasing of area of virgin forests, changes in land use, agriculture intensification, abandonment of traditional management, of grass cutting and grazing and following succession leading to overgrowing by shrubs and trees, wetland degradation, etc.);
- Air and water pollution;
- Use of insecticides.

For some species:
Restricted range, low densities, limited dispersal.

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Table 2: Araneae in the Carpathians and their IUCN regional Red List categories (RL) and criteria (Crit) in particular Carpathian countries and for the whole Carpathian Mts.

Name of species (Fauna Europea)	Family	ID	Name of species (Platnick 2014, version14.5)	CZ RL	HU RL	PL RL	Crit	RO RL	Crit	SK RL	Crit	RS RL	UA RL	Crit	Status	Endemic	Carp RL
Atypus affinis Eichwald, 1830	Atypidae	55651	Atypus affinis Eichwald, 1830	NT		CR	A1c; B2a; C2ai; D			1					1		
Atypus muralis Bertkau, 1890	Atypidae	55652	Atypus muralis Bertkau, 1890	VU				1		LC					1		LC
Atypus piceus (Sulzer, 1776)	Atypidae	55653	Atypus piceus (Sulzer, 1776)	1		CR	A1c; B2a; C2ai; D			1					1		
Nemesia pannonica coheni Fuhn & Polenec, 1967	Nemesiidae	62539	Nemesia pannonica coheni Fuhn & Polenec, 1967					NT							1	x	NT
Scytodes thoracica (Latreille, 1802)	Scytodidae	65273	Scytodes thoracica (Latreille, 1802)	1				LC		1			1		1		
Protoleptoneta bulgarica Deltshev, 1972	Leptonetidae	60168	Protoleptoneta bulgarica Deltshev, 1972									EN			1		VU
Hoplopholcus forskali (Thorell, 1871)	Pholcidae	63827	Hoplopholcus forskali (Thorell, 1871)					LC				1			1		
Pholcus alticeps Spassky, 1932	Pholcidae	63833	Pholcus alticeps Spassky, 1932			1									1		
Pholcus opilionoides (Schrank, 1781)	Pholcidae	63856	Pholcus opilionoides (Schrank, 1781)	1	LC	1		LC		1		1	1		1		
Pholcus phalangioides (Fuesslin, 1775)	Pholcidae	63859	Pholcus phalangioides (Fuesslin, 1775)	1				LC		1			1		1		
Pholcus ponticus Thorell, 1875	Pholcidae	63860	Pholcus ponticus Thorell, 1875										1		1		
Psilochorus simoni (Berland, 1911)	Pholcidae	63870	Psilochorus simoni (Berland, 1911)			1				1					1		
Segestria bavarica C.L.Koch, 1843	Segestriidae	65281	Segestria bavarica C.L.Koch, 1843	EN				LC		LC					1		LC
Segestria florentina (Rossi, 1790)	Segestriidae	65284	Segestria florentina (Rossi, 1790)					1		1?					1		
Segestria senoculata (Linnaeus, 1758)	Segestriidae	65290	Segestria senoculata (Linnaeus, 1758)	1		1		1		1		1	1		1		
Dasumia canestrinii (L. Koch, 1876)	Dysderidae	56776	Dasumia canestrinii (L. Koch, 1876)					LC							1		LC
Dasumia carpatica (Kulczyński, 1882)	Dysderidae	56777	Dasumia carpatica (Kulczyński, 1882)	VU		CR	B1; D			NT					1	x	VU
Dysdera crocota C.L.Koch, 1838	Dysderidae	56821	Dysdera crocota C.L.Koch, 1838	DD				1		DD					1		DD
Dysdera dubrovninnii Deeleman-Reinhold, 1988	Dysderidae	56824	Dysdera dubrovninnii Deeleman-Reinhold, 1988					DD		DD					1		DD
Dysdera erythrina (Walckenaer, 1802)	Dysderidae	56832	Dysdera erythrina (Walckenaer, 1802)	1	LC			1		1					1		
Dysdera erythrina lantosquensis Simon, 1882	Dysderidae	56830	Dysdera erythrina lantosquensis Simon, 1882	1											1		
Dysdera hungarica Kulczyński, 1897	Dysderidae	56856	Dysdera hungarica Kulczyński, 1897	EN	LC			1		NT		DD			1		LC
Dysdera longirostris Doblika, 1853	Dysderidae	56874	Dysdera longirostris Doblika, 1853					VU	D2	EN	B2a,b,C2b,D1	DD			1		VU
Dysdera ninnii Canestrini, 1868	Dysderidae	56890	Dysdera ninnii Canestrini, 1868	VU				LC		DD		DD	DD		1		DD
Dysdera taurica Charitonov 1956	Dysderidae	56941	Dysdera taurica Charitonov 1956							EN	B2a,b,C2b,D1				1		VU
Harpactea hombergi (Scopoli, 1763)	Dysderidae	56991	Harpactea hombergi (Scopoli, 1763)	1	LC	1		1		1		1			1		
Harpactea lepida (C.L.Koch, 1838)	Dysderidae	56998	Harpactea lepida (C.L.Koch, 1838)	1		1		LC		1					1		
Harpactea rubicunda (C.L.Koch, 1838)	Dysderidae	57011	Harpactea rubicunda (C.L.Koch, 1838)	1	LC	1		LC		1			1		1		
Harpactea saeva (Herman, 1879)	Dysderidae	57013	Harpactea saeva (Herman, 1879)					1		VU	C2a	DD	DD		1		DD
Triaeris stenaspis Simon, 1891	Oonopidae	62732	Triaeris stenaspis Simon, 1891							1					1		
Ero aphana (Walckenaer, 1802)	Mimetidae	62349	Ero aphana (Walckenaer, 1802)	LC		1		LC		1					1		
Ero cambridgei Kulczyński, 1911	Mimetidae	62350	Ero cambridgei Kulczyński, 1911	EN		VU	B1, B2a; D2			EN	B2a,b, C2a				1		VU
Ero furcata (Villers, 1789)	Mimetidae	62352	Ero furcata (Villers, 1789)	1	LC	1		1		1			1		1		
Ero tuberculata (De Geer, 1778)	Mimetidae	62354	Ero tuberculata (De Geer, 1778)	VU	NT	1		1		VU	B2a,b, C2a		DD		1		NT
Eresus kollari Rossi, 1846	Eresidae	57197	Eresus kollari Rossi, 1846	NT				DD		DD		DD	DD		1		DD
Eresus moravicus Řezáč, 2008	Eresidae	57198	Eresus moravicus Řezáč, 2008	EN						DD					1		NT
Hyptiotes paradoxus (C.L.Koch, 1834)	Uloboridae	67314	Hyptiotes paradoxus (C.L.Koch, 1834)	DD				LC		1			1		1		LC
Uloborus walckenaerius Latreille, 1806	Uloboridae	67321	Uloborus walckenaerius Latreille, 1806	CR				LC		LC					1		LC
Carpathonesticus avrigensis Weiss & Heimer, 1982	Nesticidae	62567	Carpathonesticus avrigensis Weiss & Heimer, 1982					DD							1	x	DD
Carpathonesticus biroi (Kulczyński, 1895)	Nesticidae	62568	Carpathonesticus biroi (Kulczyński, 1895)					NT							1	x	NT
Carpathonesticus cibiniensis (Weiss, 1981)	Nesticidae	62570	Carpathonesticus cibiniensis (Weiss, 1981)					VU	D2						1	x	VU
Carpathonesticus fodinarum (Kulczyn'ski, 1894)	Nesticidae	62571	Carpathonesticus fodinarum (Kulczyn'ski, 1894)					NT							1	x	NT
Carpathonesticus galotshkai Evtushenko, 1993	Nesticidae	62572	Carpathonesticus galotshkai Evtushenko, 1993										VU	B2a	1	x	VU
Carpathonesticus hungaricus (Chyzer, 1894)	Nesticidae	62573	Carpathonesticus hungaricus (Chyzer, 1894)					VU	D2						1	x	VU
Carpathonesticus lotriensis Weiss, 1983	Nesticidae	62574	Carpathonesticus lotriensis Weiss, 1983					VU	D2						1	x	VU
Carpathonesticus paraavrigensis Weiss & Heimer, 1982	Nesticidae	62576	Carpathonesticus paraavrigensis Weiss & Heimer, 1982					DD							1	x	DD
Carpathonesticus puteorum (Kulczyn'ski, 1894)	Nesticidae	62578	Carpathonesticus puteorum (Kulczyn'ski, 1894)					NT							1	x	NT
Carpathonesticus racovitzai (Dumitrescu, 1980)	Nesticidae	62579	Carpathonesticus racovitzai (Dumitrescu, 1980)					NT							1	x	NT
Carpathonesticus simoni (Fage, 1931)	Nesticidae	62580	Carpathonesticus simoni (Fage, 1931)					VU	D2						1	x	VU
Carpathonesticus spelaeus (Szombathy, 1917)	Nesticidae	62581	Carpathonesticus spelaeus (Szombathy, 1917)					NT							1	x	NT
Nesticus balacescui Dumitrescu, 1979	Nesticidae	62585	Nesticus balacescui Dumitrescu, 1979					VU	D2						1	x	VU

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Nesticus carpaticus Dumitrescu, 1979	Nesticidae	62588	Nesticus carpaticus Dumitrescu, 1979					VU	D2						1	x	VU
Nesticus cellulanus (Clerck, 1757)	Nesticidae	62590	Nesticus cellulanus (Clerck, 1757)	1		1		LC		1		1	1		1		
Nesticus cellulanus affinis Kulczyn'ski, 1894	Nesticidae	62589	Nesticus cellulanus affinis Kulczyn'ski, 1894							1					1		
Nesticus cernensis Dumitrescu, 1979	Nesticidae	62591	Nesticus cernensis Dumitrescu, 1979					VU	D2						1	x	VU
Nesticus constantinescui Dumitrescu, 1979	Nesticidae	62592	Nesticus constantinescui Dumitrescu, 1979					VU	D2						1	x	VU
Nesticus diaconui Dumitrescu, 1979	Nesticidae	62593	Nesticus diaconui Dumitrescu, 1979					VU	D2						1	x	VU
Nesticus ionescui Dumitrescu, 1979	Nesticidae	62598	Nesticus ionescui Dumitrescu, 1979					LC							1	x	LC
Nesticus orghidani Dumitrescu, 1979	Nesticidae	62604	Nesticus orghidani Dumitrescu, 1979					VU	D2						1	x	VU
Nesticus plesai Dumitrescu, 1980	Nesticidae	62605	Nesticus plesai Dumitrescu, 1980					VU	D2						1	x	VU
Nesticus wiehlei Dumitrescu, 1979	Nesticidae	62608	Nesticus wiehlei Dumitrescu, 1979					VU	D2						1	x	VU
Asagena meridionalis Kulczyński, 1894	Theridiidae	66245	Asagena meridionalis Kulczyński, 1894							CR	B2a,b, C2a, D1				1		EN
Asagena phalerata (Panzer, 1801)	Theridiidae	66246	Asagena phalerata (Panzer, 1801)	1		1		LC		1		1	1		1		
Crustulina guttata (Wider, 1834)	Theridiidae	66255	Crustulina guttata (Wider, 1834)	1	LC	1		LC		1		1			1		
Crustulina sticta (O.P.-Cambridge, 1861)	Theridiidae	66257	Crustulina sticta (O.P.-Cambridge, 1861)							VU	B2a,b, C2a, D1				1		NT
Cryptachaea riparia (Blackwall, 1834)	Theridiidae	66260	Cryptachaea riparia (Blackwall, 1834)	1		1		LC		1					1		
Dipoena braccata (C.L.Koch, 1841)	Theridiidae	66262	Dipoena braccata (C.L.Koch, 1841)	VU				DD		1					1		
Dipoena convexa (Blackwall, 1870)	Theridiidae	66263	Lasaeola convexa (Blackwall, 1870)					DD							1		DD
Dipoena coracina (C.L.Koch, 1837)	Theridiidae	66264	Dipoena coracina (C.L.Koch, 1837)	VU						1					1		
Dipoena erythropus (Simon, 1881)	Theridiidae	66266	Dipoena erythropus (Simon, 1881)	CR		VU	B1, B2a; D	DD		LC					1		VU
Dipoena melanogaster (C.L.Koch, 1837)	Theridiidae	66271	Dipoena melanogaster (C.L.Koch, 1837)	1		1		LC		1		1			1		
Dipoena nigroreticulata (Simon, 1879)	Theridiidae	66272	Dipoena nigroreticulata (Simon, 1879)							CR	B2a,b, C2a, D1				1		VU
Dipoena torva (Thorell, 1875)	Theridiidae	66277	Dipoena torva (Thorell, 1875)	DD				DD		VU	B2a,b, C2a, D1				1		DD
Enoplognatha caricis (Fickert, 1876)	Theridiidae	66287	Enoplognatha caricis (Fickert, 1876)					DD		DD					1		DD
Enoplognatha latimana Hippa & Oksala, 1982	Theridiidae	66292	Enoplognatha latimana Hippa & Oksala, 1982	1		1		1		1					1		
Enoplognatha mordax (Thorell, 1875)	Theridiidae	66297	Enoplognatha mordax (Thorell, 1875)							EN	B2a,b, C2a, D1				1		VU
Enoplognatha oelandica (Thorell, 1875)	Theridiidae	66299	Enoplognatha oelandica (Thorell, 1875)							EN	B2a,b, C2a, D1				1		VU
Enoplognatha ovata (Clerck, 1757)	Theridiidae	66300	Enoplognatha ovata (Clerck, 1757)	1		1		LC		1		1	1		1		
Enoplognatha thoracica (Hahn, 1833)	Theridiidae	66307	Enoplognatha thoracica (Hahn, 1833)	1		1		LC		1		1	1		1		
Episinus angulatus (Blackwall, 1836)	Theridiidae	66311	Episinus angulatus (Blackwall, 1836)	1		1		LC		1					1		
Episinus maculipes Cavana, 1876	Theridiidae	66313	Episinus maculipes Cavana, 1876							1					1		
Episinus truncatus Latreille, 1809	Theridiidae	66316	Episinus truncatus Latreille, 1809	1	LC	1		LC		1			1		1		
Euryopis flavomaculata (C.L.Koch, 1836)	Theridiidae	66321	Euryopis flavomaculata (C.L.Koch, 1836)	1		1		1		1			1		1		
Euryopis laeta (Westring, 1861)	Theridiidae	66324	Euryopis laeta (Westring, 1861)	EN	LC	CR	B2a; D			NT					1		EN
Euryopis quinqueguttata Thorell, 1875	Theridiidae	66328	Euryopis quinqueguttata Thorell, 1875	EN						LC					1		NT
Euryopis saukea Levi, 1951	Theridiidae	66329	Euryopis saukea Levi, 1951	VU											1		VU
Heterotheridion nigrovariegatum (Simon, 1873)	Theridiidae	66334	Heterotheridion nigrovariegatum (Simon, 1873)	NT				LC		1					1		
Lasaeola prona (Menge, 1868)	Theridiidae	66338	Lasaeola prona (Menge, 1868)	VU						NT					1		NT
Lasaeola tristis (Hahn, 1833)	Theridiidae	66340	Lasaeola tristis (Hahn, 1833)	1	LC	1				1			1		1		
Neottiura bimaculata (Linnaeus, 1767)	Theridiidae	66351	Neottiura bimaculata (Linnaeus, 1767)	1	LC	1		LC		1			1		1		
Neottiura suaveolens (Simon, 1879)	Theridiidae	66354	Neottiura suaveolens (Simon, 1879)	1	LC					1					1		
Ohlertidion ohlerti (Thorell, 1870)	Theridiidae	66357	Ohlertidion ohlerti (Thorell, 1870)			VU	B1			VU	B2a,b, C2a, D1		VU	B1a	1		VU
Paidiscura pallens (Blackwall, 1834)	Theridiidae	66361	Paidiscura pallens (Blackwall, 1834)	1		1		LC		1			1		1		
Parasteatoda lunata (Clerck, 1757)	Theridiidae	66363	Parasteatoda lunata (Clerck, 1757)	1		1		LC		1		1	1		1		
Parasteatoda simulans (Thorell, 1875)	Theridiidae	66364	Parasteatoda simulans (Thorell, 1875)	1		1		LC		1			1		1		
Parasteatoda tabulata (Levi, 1980)	Theridiidae	66362	Parasteatoda tabulata (Levi, 1980)			1		1		1			1		1		
Parasteatoda tepidariorum (C.L.Koch, 1841)	Theridiidae	66365	Parasteatoda tepidariorum (C.L.Koch, 1841)	1				LC		1		1	1		1		
Pholcomma gibbum (Westring, 1851)	Theridiidae	66367	Pholcomma gibbum (Westring, 1851)	LC		1		1		1					1		
Phycosoma inornatum (O.P.-Cambridge, 1861)	Theridiidae	66370	Phycosoma inornatum (O.P.-Cambridge, 1861)					1		NT					1		
Phylloneta impressum L. Koch, 1881	Theridiidae	66371	Phylloneta impressa (L.Koch, 1881)	1	LC	1		LC		1			1		1		
Phylloneta sisyphia (Clerck, 1757)	Theridiidae	66373	Phylloneta sisyphia (Clerck, 1757)	1		1		1		1			1		1		
Platnickina tincta (Walckenaer, 1802)	Theridiidae	66375	Platnickina tincta (Walckenaer, 1802)	1		1		LC		1			1		1		
Robertus arundineti (O.P.-Cambridge, 1871)	Theridiidae	66379	Robertus arundineti (O.P.-Cambridge, 1871)	1	LC	1		1		1			1		1		
Robertus frivaldszkyi (Chyzer, 1894)	Theridiidae	66382	Robertus frivaldszkyi (Chyzer, 1894)							1					1		
Robertus lividus (Blackwall, 1836)	Theridiidae	66386	Robertus lividus (Blackwall, 1836)	1		1		1		1		1	1		1		
Robertus neglectus (O.P.-Cambridge, 1871)	Theridiidae	66391	Robertus neglectus (O.P.-Cambridge, 1871)	NT	LC	1				1			1		1		
Robertus scoticus Jackson, 1914	Theridiidae	66392	Robertus scoticus Jackson, 1914			1		1		VU	B2a,b, C2a, D1				1		NT
Robertus truncorum (L.Koch, 1872)	Theridiidae	66393	Robertus truncorum (L.Koch, 1872)	VU		LC		1		1			1		1		

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Robertus ungulatus Vogelsanger, 1944	Theridiidae	66394	Robertus ungulatus Vogelsanger, 1944							EN	B2a,b, C2a, D1				1		VU
Rugathodes bellicosus (Simon, 1873)	Theridiidae	66397	Rugathodes bellicosus (Simon, 1873)	1		VU	B2	1		NT					1		NT
Rugathodes instabilis (O.P.-Cambridge, 1871)	Theridiidae	66398	Rugathodes instabilis (O.P.-Cambridge, 1871)	DD						EN	B2a,b, C2a, D1		1		1		NT
Sardinidion blackwalli O.P.-Cambridge, 1871	Theridiidae	66401	Sardinidion blackwalli O.P.-Cambridge, 1871	DD						EN	B2a,b, C2a, D1				1		VU
Selimus pulchellus (Walckenaer, 1802)	Theridiidae	66402	Anelosimus pulchellus (Walckenaer, 1802)							RE?					1		
Selimus vittatus (C.L. Koch, 1836)	Theridiidae	66403	Anelosimus vittatus (C.L.Koch, 1836)	1		1				VU	B2a,b, C2a, D1				1		LC
Simitidion simile (C.L.Koch, 1836)	Theridiidae	66406	Simitidion simile (C.L.Koch, 1836)	NT		1		LC		1			1		1		
Steatoda albomaculata (De Geer, 1778)	Theridiidae	66408	Steatoda albomaculata (De Geer, 1778)	NT		1				1					1		
Steatoda bipunctata (Linnaeus, 1758)	Theridiidae	66410	Steatoda bipunctata (Linnaeus, 1758)	1		1		1		1		1	1		1		
Steatoda castanea (Clerck, 1757)	Theridiidae	66411	Steatoda castanea (Clerck, 1757)	1		1		LC		1		1	1		1		
Steatoda grossa (C.L.Koch, 1838)	Theridiidae	66415	Steatoda grossa (C.L.Koch, 1838)	1				LC		1			1		1		
Steatoda paykulliana (Walckenaer, 1805)	Theridiidae	66421	Steatoda paykulliana (Walckenaer, 1805)					LC							1		LC
Steatoda triangulosa (Walckenaer, 1802)	Theridiidae	66422	Steatoda triangulosa (Walckenaer, 1802)	1				LC		1		1	1		1		
Theonoe minutissima (O.P.-Cambridge, 1879)	Theridiidae	66426	Theonoe minutissima (O.P.-Cambridge, 1879)	VU						VU	B2a,b, C2a, D1				1		NT
Theridion betteni Wiehle, 1960	Theridiidae	66432	Theridion betteni Wiehle, 1960	1		EN	B1, B2a; D2			1					1		NT
Theridion boesenbergi Strand, 1904	Theridiidae	66434	Theridion boesenbergi Strand, 1904					1		DD					1		
Theridion cinereum Thorell, 1875	Theridiidae	66437	Theridion cinereum Thorell, 1875							DD					1		DD
Theridion familiare O.P.-Cambridge, 1871	Theridiidae	66441	Theridion familiare O.P.-Cambridge, 1871							1					1		
Theridion hemerobium Simon, 1914	Theridiidae	66447	Theridion hemerobium Simon, 1914	DD						VU	B2a,b, C2a, D1				1		NT
Theridion italiense Wunderlich, 1995	Theridiidae	66450	Theridion italiense Wunderlich, 1995					1							1		
Theridion melanurum Hahn, 1831	Theridiidae	66456	Theridion melanurum Hahn, 1831	NT		1		LC		NT					1		LC
Theridion mystaceum L.Koch, 1870	Theridiidae	66459	Theridion mystaceum L.Koch, 1870	1		1				1					1		
Theridion pictum (Walckenaer, 1802)	Theridiidae	66468	Theridion pictum (Walckenaer, 1802)	1		1		1		1			1		1		
Theridion pinastri L.Koch, 1872	Theridiidae	66469	Theridion pinastri L.Koch, 1872	1		1		LC		1			1		1		
Theridion varians Hahn, 1833	Theridiidae	66482	Theridion varians Hahn, 1833	1		1		LC		1			1		1		
Theridiosoma gemmosum (L.Koch, 1877)	Theridiosomatidae	66489	Theridiosoma gemmosum (L.Koch, 1877)	1						VU	B2a,b, C2a, D1				1		NT
Comaroma simoni Bertkau, 1889	Anapidae	55017	Comaroma simoni Bertkau, 1889	CR						CR	B2a,b, C2a, D1				1		CR
Mysmenella jobi (Kraus, 1967)	Mysmenidae	62460	Mysmenella jobi (Kraus, 1967)							EN	B2a,b, C2a, D1				1		VU
Troglonata granulum Simon, 1922	Mysmenidae	62462	Troglonata granulum Simon, 1922	VU						1					1		LC
Abacoproeces saltuum (L.Koch, 1872)	Linyphiidae	60306	Abacoproeces saltuum (L.Koch, 1872)	NT		1		1		1					1		
Acartauchenius scurrilis (O.P.-Cambridge, 1872)	Linyphiidae	60313	Acartauchenius scurrilis (O.P.-Cambridge, 1872)	VU				DD		1					1		LC
Agnyphantes expunctus (O.P.-Cambridge, 1875)	Linyphiidae	60316	Agnyphantes expunctus (O.P.-Cambridge, 1875)			CR	D	1		LC			DD		1		LC
Agyneta cauta (O.P.-Cambridge, 1902)	Linyphiidae	60320	Agyneta cauta (O.P.-Cambridge, 1902)			1		1		1					1		
Agyneta conigera (O.P.-Cambridge, 1863)	Linyphiidae	60321	Agyneta conigera (O.P.-Cambridge, 1863)	DD		1		LC		LC			LC		1		LC
Agyneta decora (O.P.-Cambridge, 1871)	Linyphiidae	60322	Agyneta decora (O.P.-Cambridge, 1871)							RE?					1		
Agyneta olivacea (Emerton, 1882)	Linyphiidae	60324	Agyneta olivacea (Emerton, 1882)							1					1		
Agyneta ramosa Jackson, 1912	Linyphiidae	60325	Agyneta ramosa Jackson, 1912	NT		1				1			1		1		
Agyneta subtilis (O.P.-Cambridge, 1863)	Linyphiidae	60327	Agyneta subtilis (O.P.-Cambridge, 1863)	LC		1		1		1					1		
Allomengea scopigera (Grube, 1859)	Linyphiidae	60333	Allomengea scopigera (Grube, 1859)	VU						1					1		LC
Allomengea vidua (L.Koch, 1879)	Linyphiidae	60334	Allomengea vidua (L.Koch, 1879)	VU						EN	B2a,b, C2a, D1				1		VU
Anguliphantes angulipalpis (Westring, 1851)	Linyphiidae	60335	Anguliphantes angulipalpis (Westring, 1851)	NT	LC	1				1		1			1		
Anguliphantes monticola (Kulczyński, 1881)	Linyphiidae	60336	Anguliphantes monticola (Kulczyński, 1881)			EN	D	1		NT					1		VU
Anguliphantes silli (Weiss, 1987)	Linyphiidae	60337	Anguliphantes silli (Weiss, 1987)					1							1	x	
Anguliphantes tripartitus (Miller & Svatoň, 1978)	Linyphiidae	60338	Anguliphantes tripartitus (Miller & Svatoň, 1978)	NT		LC				1				DD	1		LC
Aphileta misera (O.P.-Cambridge, 1882	Linyphiidae	60342	Aphileta misera (O.P.-Cambridge, 1882			1				EN	B2a,b, C2a, D1				1		NT
Araeoncus anguineus (L. Koch, 1869)	Linyphiidae	60344	Araeoncus anguineus (L. Koch, 1869)					1							1		
Araeoncus crassiceps (Westring, 1861)	Linyphiidae	60348	Araeoncus crassiceps (Westring, 1861)	EN				DD		EN	B2a,b, C2a, D1				1		EN
Araeoncus humilis (Blackwall, 1841)	Linyphiidae	60352	Araeoncus humilis (Blackwall, 1841)	1		1				1		1	1		1		
Asthenargus carpaticus Weiss, 1998	Linyphiidae	60363	Asthenargus carpaticus Weiss, 1998					DD							1	x	DD
Asthenargus helveticus Schenkel, 1936	Linyphiidae	60364	Asthenargus helveticus Schenkel, 1936	VU						CR	B2a,b, C2a, D1				1		EN
Asthenargus paganus (Simon, 1884)	Linyphiidae	60366	Asthenargus paganus (Simon, 1884)	NT		1				1			1		1		
Asthenargus perforatus Schenkel, 1929	Linyphiidae	60367	Asthenargus perforatus Schenkel, 1929							CR	B2a,b, C2a, D1				1		EN
Bathyphantes approximatus (O.P.-Cambridge, 1871)	Linyphiidae	60376	Bathyphantes approximatus (O.P.-Cambridge, 1871)	1		1		1		1					1		
Bathyphantes eumenis (L.Koch, 1879)	Linyphiidae	60378	Bathyphantes eumenis (L.Koch, 1879)							DD					1		DD
Bathyphantes gracilis (Blackwall, 1841)	Linyphiidae	60379	Bathyphantes gracilis (Blackwall, 1841)	1		1				1			1		1		
Bathyphantes nigrinus (Westring, 1851)	Linyphiidae	60384	Bathyphantes nigrinus (Westring, 1851)	1		1		LC		1		1	1		1		

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Bathyphantes parvulus (Westring, 1851)	Linyphiidae	60386	Bathyphantes parvulus (Westring, 1851)	1		1				1					1		
Bathyphantes setiger F.O.P.-Cambridge, 1894	Linyphiidae	60389	Bathyphantes setiger F.O.P.-Cambridge, 1894							1					1		
Bathyphantes similis Kulczyński, 1894	Linyphiidae	60390	Bathyphantes similis Kulczyński, 1894	VU		EN	D			VU	B2a,b, C2a, D1		DD		1		VU
Bolephthyphantes index (Thorell, 1856)	Linyphiidae	60395	Bolephthyphantes index (Thorell, 1856)			VU	B2a, D	1							1		VU
Bolyphantes alticeps (Sundevall, 1833)	Linyphiidae	60396	Bolyphantes alticeps (Sundevall, 1833)	1		1		LC		1			1		1		
Bolyphantes luteolus (Blackwall, 1833)	Linyphiidae	60400	Bolyphantes luteolus (Blackwall, 1833)	NT		1		1		1					1		
Bolyphantes nigropictus Simon, 1884	Linyphiidae	60401	Bolyphantes nigropictus Simon, 1884										1?		1		
Canariphantes nanus (Kulczyński, 1898)	Linyphiidae	60413	Canariphantes nanus (Kulczyński, 1898)	EN						1					1		
Carorita limnaea (Crosby & Bishop, 1927)	Linyphiidae	60417	Carorita limnaea (Crosby & Bishop, 1927)			EN	B2a, D			CR	B2a,b, C2a, D1				1		EN
Caviphantes saxetorum (Hull, 1916)	Linyphiidae	60419	Caviphantes saxetorum (Hull, 1916)			CR	B2a, D2						DD		1		CR
Centromerita bicolor (Blackwall, 1833)	Linyphiidae	60420	Centromerita bicolor (Blackwall, 1833)	1		1		LC		1		1	1		1		
Centromerita concinna (Thorell, 1875)	Linyphiidae	60421	Centromerita concinna (Thorell, 1875)	EN		1		LC		VU	B2a,b, C2a, D1				1		LC
Centromerus acutidentatus Deltshev, 2002	Linyphiidae	60423	Centromerus acutidentatus Deltshev, 2002									VU			1		VU
Centromerus albidus Simon, 1929	Linyphiidae	60424	Centromerus albidus Simon, 1929							NT					1		NT
Centromerus arcanus (O.P.-Cambridge, 1873)	Linyphiidae	60428	Centromerus arcanus (O.P.-Cambridge, 1873)	NT		1				1			1		1		
Centromerus brevivulvatus Dahl, 1912	Linyphiidae	60431	Centromerus brevipalpus (Menge, 1866)							1					1		
Centromerus capucinus (Simon, 1884)	Linyphiidae	60433	Centromerus capucinus (Simon, 1884)	VU						VU	B2a,b, C2a, D1				1		VU
Centromerus cavernarum (L.Koch, 1872)	Linyphiidae	60434	Centromerus cavernarum (L.Koch, 1872)	VU		EN	B2a, D2	LC		1			NT		1		LC
Centromerus chappuisi Fage, 1931	Linyphiidae	60435	Centromerus chappuisi Fage, 1931					VU							1	x	VU
Centromerus crinitus Rosca, 1935	Linyphiidae	60439	Centromerus crinitus Rosca, 1935					DD							1	x	DD
Centromerus dacicus Dumitrescu & Georgescu, 1980	Linyphiidae	60440	Centromerus dacicus Dumitrescu & Georgescu, 1980					DD							1	x	DD
Centromerus dilutus (O.P.-Cambridge, 1875)	Linyphiidae	60441	Centromerus dilutus (O.P.-Cambridge, 1875)							EN	B2a,b, C2a, D1				1		VU
Centromerus gentilis Dumitrescu & Georgescu, 1980	Linyphiidae	60445	Centromerus gentilis Dumitrescu & Georgescu, 1980					VU							1	x	VU
Centromerus incilium (L.Koch, 1881)	Linyphiidae	60446	Centromerus incilium (L.Koch, 1881)	LC		1		1		1					1		
Centromerus lakatnikensis (Drensky, 1931)	Linyphiidae	60447	Centromerus lakatnikensis (Drensky, 1931)									VU			1		VU
Centromerus levitarsis (Simon, 1884)	Linyphiidae	60449	Centromerus levitarsis (Simon, 1884)			LC		DD		EN	B2a,b, C2a, D1				1		NT
Centromerus pabulator (O.P.-Cambridge, 1875)	Linyphiidae	60455	Centromerus pabulator (O.P.-Cambridge, 1875)	1		1		1		1		1	1		1		
Centromerus persimilis (O.P.-Cambridge, 1912)	Linyphiidae	60459	Centromerus persimilis (O.P.-Cambridge, 1912)			VU	B2a, D2			VU	B2a,b, C2a, D1				1		VU
Centromerus prudens (O.P.-Cambridge, 1873)	Linyphiidae	60462	Centromerus prudens (O.P.-Cambridge, 1873)							CR	B2a,b, C2a, D1				1		VU
Centromerus sellarius (Simon, 1884)	Linyphiidae	60465	Centromerus sellarius (Simon, 1884)	1		LC		1		1			LC		1		
Centromerus semiater (L.Koch, 1879)	Linyphiidae	60466	Centromerus semiater (L.Koch, 1879)	VU						1					1		
Centromerus serbicus Deltshev, 2002	Linyphiidae	60467	Centromerus serbicus Deltshev, 2002									EN			1		EN
Centromerus serratus (O.P.-Cambridge, 1875)	Linyphiidae	60468	Centromerus serratus (O.P.-Cambridge, 1875)		LC					VU	B2a,b, C2a, D1				1		
Centromerus setosus Miller & Kratochvil, 1940	Linyphiidae	60469	Centromerus setosus Miller & Kratochvil, 1940							RE?					1		RE?
Centromerus silvicola (Kulczyński, 1887)	Linyphiidae	60471	Centromerus silvicola (Kulczyński, 1887)	CR		EN	B2a, D2	DD		NT			NT		1		VU
Centromerus sylvaticus (Blackwall, 1841)	Linyphiidae	60477	Centromerus sylvaticus (Blackwall, 1841)	1	LC	1		1		1			1		1		
Centromerus unctus (L. Koch, 1870)	Linyphiidae	60480	Centromerus unctus (L. Koch, 1870)					DD							1		DD
Ceraticelus bulbosus (Emerton, 1882)	Linyphiidae	60486	Ceraticelus bulbosus (Emerton, 1882)												1		
Ceratinella brevipes (Westring, 1851)	Linyphiidae	60488	Ceratinella brevipes (Westring, 1851)	1		1		1		1			1		1		
Ceratinella brevis (Wider, 1834)	Linyphiidae	60489	Ceratinella brevis (Wider, 1834)	1	LC	1		LC		1			1		1		
Ceratinella major Kulczyński, 1894	Linyphiidae	60490	Ceratinella major Kulczyński, 1894	NT		1		1		1					1		
Ceratinella marcui Rosca, 1932	Linyphiidae	60491	Ceratinella marcui Rosca, 1932					DD							1	x	DD
Ceratinella scabrosa (O.P.-Cambridge, 1871)	Linyphiidae	60494	Ceratinella scabrosa (O.P.-Cambridge, 1871)	1		LC		1		1					1		
Ceratinella wideri (Thorell, 1871)	Linyphiidae	60495	Ceratinella wideri (Thorell, 1871)	1				1							1		
Cineta gradata (Simon, 1881)	Linyphiidae	60499	Cineta gradata (Simon, 1881)							VU	B2a,b, C2a, D1				1		VU
Cnephalocotes obscurus (Blackwall, 1834)	Linyphiidae	60500	Cnephalocotes obscurus (Blackwall, 1834)	VU		1				1		1	1		1		
Collinsia distincta (Simon, 1884)	Linyphiidae	60506	Collinsia distincta (Simon, 1884)					NT							1		
Collinsia inerrans (O.P.-Cambridge, 1885)	Linyphiidae	60509	Collinsia inerrans (O.P.-Cambridge, 1885)							EN	B2a,b, C2a, D1				1		VU
Dicymbium nigrum (Blackwall, 1834)	Linyphiidae	60521	Dicymbium nigrum (Blackwall, 1834)		LC	1		LC				1	1		1		
Dicymbium nigrum brevisetosum Locket, 1962	Linyphiidae	60520	Dicymbium nigrum brevisetosum Locket, 1962	1		1				1			1		1		
Dicymbium tibiale (Blackwall, 1836)	Linyphiidae	60522	Dicymbium tibiale (Blackwall, 1836)	1		1		1		1		1	1		1		
Diplocentria bidentata (Emerton, 1882)	Linyphiidae	60525	Diplocentria bidentata (Emerton, 1882)							DD			DD		1		DD
Diplocentria rectangulata (Emerton, 1915)	Linyphiidae	60528	Diplocentria rectangulata (Emerton, 1915)							EN	B2a,b, C2a, D1				1		VU
Diplocephalus alpinus subrufus Rosca, 1935	Linyphiidae	60529	Diplocephalus alpinus subrufus Rosca, 1935					DD							1	x	DD
Diplocephalus cristatus (Blackwall, 1833)	Linyphiidae	60541	Diplocephalus cristatus (Blackwall, 1833)	1		1		LC		1		1	1		1		
Diplocephalus dentatus (Tullgren, 1955)	Linyphiidae	60543	Diplocephalus dentatus (Tullgren, 1955)	EN						DD					1		VU

Name of species (Fauna Europea)	Family	ID	Name of species (Platnick 2014, version14.5)	CZ RL	HU RL	PL RL	Crit	RO RL	Crit	SK RL	Crit	RS RL	UA RL	Crit	Status	Endemic	Carp RL
Diplocephalus helleri (L.Koch, 1869)	Linyphiidae	60548	Diplocephalus helleri (L.Koch, 1869)	VU		VU	B2a, D	LC		1			NT		1		LC
Diplocephalus latifrons (O.P.-Cambridge, 1863)	Linyphiidae	60550	Diplocephalus latifrons (O.P.-Cambridge, 1863)	1		1		LC		1		1	1		1		
Diplocephalus permixtus (O.P.-Cambridge, 1871)	Linyphiidae	60554	Diplocephalus permixtus (O.P.-Cambridge, 1871)			1		LC		VU	B2a,b, C2a, D1		VU	B1a	1		NT
Diplocephalus picinus (Blackwall, 1841)	Linyphiidae	60555	Diplocephalus picinus (Blackwall, 1841)	1		1		1		1			1		1		
Diplostyla concolor (Wider, 1834)	Linyphiidae	60566	Diplostyla concolor (Wider, 1834)		LC	1		LC		1		1	1		1		
Dismodicus bifrons (Blackwall, 1841)	Linyphiidae	60567	Dismodicus bifrons (Blackwall, 1841)	1		1		1		1			1		1		
Dismodicus elevatus (C.L.Koch, 1838)	Linyphiidae	60568	Dismodicus elevatus (C.L.Koch, 1838)	1	LC	1		1		1			1		1		
Donacochara speciosa (Thorell, 1875)	Linyphiidae	60570	Donacochara speciosa (Thorell, 1875)	1						NT					1		LC
Drapetisca socialis (Sundevall, 1833)	Linyphiidae	60571	Drapetisca socialis (Sundevall, 1833)	1	LC	1		LC		1			1		1		
Drepanostylus uncatus (O.P.-Cambridge, 1873)	Linyphiidae	60574	Drepanostylus uncatus (O.P.-Cambridge, 1873)	1						DD					1		DD
Drepanotylus borealis Holm, 1945	Linyphiidae	60572	Drepanotylus borealis Holm, 1945										1?		1		
Entelecara acuminata (Wider, 1834)	Linyphiidae	60576	Entelecara acuminata (Wider, 1834)	EN	LC	1		LC		1			1		1		
Entelecara congenera (O.P.-Cambridge, 1879)	Linyphiidae	60579	Entelecara congenera (O.P.-Cambridge, 1879)	1		1				1			1		1		
Entelecara errata O.P.-Cambridge, 1913	Linyphiidae	60582	Entelecara errata O.P.-Cambridge, 1913							CR	B2a,b, C2a, D1				1		VU
Entelecara erythropus (Westring, 1851)	Linyphiidae	60583	Entelecara erythropus (Westring, 1851)	1		VU	B2a, D			LC			NT		1		NT
Entelecara flavipes (Blackwall, 1834)	Linyphiidae	60584	Entelecara flavipes (Blackwall, 1834)	1						LC					1		LC
Entelecara media Kulczyński, 1887	Linyphiidae	60590	Entelecara media Kulczyński, 1887			VU	B2a, D			NT					1		VU
Entelecara omissa O.P.-Cambridge, 1902	Linyphiidae	60592	Entelecara omissa O.P.-Cambridge, 1902	NT											1		NT
Entelecara strandi Kolosváry, 1934a	Linyphiidae	60594	Entelecara strandi Kolosváry, 1934												?		
Erigone atra Blackwall, 1833	Linyphiidae	60602	Erigone atra Blackwall, 1833	1		1		LC		1			1		1		
Erigone cristatopalpus Simon, 1884	Linyphiidae	60606	Erigone cristatopalpus Simon, 1884							EN	B2a,b, C2a, D1				1		EN
Erigone dentipalpis (Wider, 1834)	Linyphiidae	60609	Erigone dentipalpis (Wider, 1834)	1	LC	1		LC		1		1	1		1		
Erigone jaegeri Baehr, 1984	Linyphiidae	60614	Erigone jaegeri Baehr, 1984							DD					1		DD
Erigone remota L. Koch, 1869	Linyphiidae	60628	Erigone remota L. Koch, 1869					LC							1		LC
Erigone strandi Kolosváry, 1934a	Linyphiidae	60631	Erigone strandi Kolosváry, 1934												?		
Erigone tirolensis L.Koch, 1872	Linyphiidae	60634	Erigone tirolensis L.Koch, 1872			CR	B2a, D2	DD		DD					1		EN
Erigonella hiemalis (Blackwall, 1841)	Linyphiidae	60637	Erigonella hiemalis (Blackwall, 1841)	NT		1				1			1		1		
Erigonella ignobilis (O.P.-Cambridge, 1871)	Linyphiidae	60638	Erigonella ignobilis (O.P.-Cambridge, 1871)							EN	B2a,b, C2a, D1				1		VU
Erigonella subelevata (L.Koch, 1869)	Linyphiidae	60640	Erigonella subelevata (L.Koch, 1869)							RE?					1		
Erigonoplus globipes (L.Koch, 1872)	Linyphiidae	60645	Erigonoplus globipes (L.Koch, 1872)			CR	A3, B2, D2			LC					1		NT
Erigonoplus jarmilae (Miller, 1943)	Linyphiidae	60648	Erigonoplus jarmilae (Miller, 1943)	NT						LC					1		LC
Evansia merens O.P.-Cambridge, 1900	Linyphiidae	60657	Evansia merens O.P.-Cambridge, 1900			VU	D	1		1					1		LC
Floronia bucculenta (Clerck, 1757)	Linyphiidae	60661	Floronia bucculenta (Clerck, 1757)	1				LC		1			1		1		
Formiphantes lepthyphantiformis (Strand, 1907)	Linyphiidae	60662	Formiphantes lepthyphantiformis (Strand, 1907)	VU		CR	B2a, D1, D2			VU	B2a,b, C2a, D1				1		EN
Frontinellina frutetorum (C.L.Koch, 1834)	Linyphiidae	60664	Frontinellina frutetorum (C.L.Koch, 1834)			1		1		1					1		
Glyphesis servulus (Simon, 1881)	Linyphiidae	60668	Glyphesis servulus (Simon, 1881)							VU	B2a,b, C2a, D1				1		NT
Gnathonarium dentatum (Wider, 1834)	Linyphiidae	60670	Gnathonarium dentatum (Wider, 1834)	1	LC	1				1		1	1		1		
Gonatium hilare (Thorell, 1875)	Linyphiidae	60676	Gonatium hilare (Thorell, 1875)							NT					1		NT
Gonatium orientale Fage 1931	Linyphiidae	60679	Gonatium orientale Fage 1931										DD		1		DD
Gonatium paradoxum (L.Koch, 1869)	Linyphiidae	60681	Gonatium paradoxum (L.Koch, 1869)	1		1		1		1					1		
Gonatium rubellum (Blackwall, 1841)	Linyphiidae	60682	Gonatium rubellum (Blackwall, 1841)	1		1		LC		1			1		1		
Gonatium rubens (Blackwall, 1833)	Linyphiidae	60683	Gonatium rubens (Blackwall, 1833)			1		LC		1					1		
Gongylidiellum compar (Westring, 1861)	Linyphiidae	60685	Gongylidiellum compar (Westring, 1861)										DD		1		
Gongylidiellum latebricola (O.P.-Cambridge, 1871)	Linyphiidae	60689	Gongylidiellum latebricola (O.P.-Cambridge, 1871)	LC		1		1		1					1		
Gongylidiellum murcidum Simon, 1884	Linyphiidae	60690	Gongylidiellum murcidum Simon, 1884	1		1				1					1		
Gongylidiellum vivum (O.P.-Cambridge, 1875)	Linyphiidae	60692	Gongylidiellum vivum (O.P.-Cambridge, 1875)	EN		1		1		1					1		
Gongylidium gebhardti Kolosvary, 1934	Linyphiidae	60693	Gongylidium gebhardti Kolosvary, 1934a												?		
Gongylidium rufipes (Linnaeus, 1758)	Linyphiidae	60694	Gongylidium rufipes (Linnaeus, 1758)	1	LC	1		LC		1			1		1		
Helophora insignis (Blackwall, 1841)	Linyphiidae	60697	Helophora insignis (Blackwall, 1841)	1		1		1		1					1		
Heterotrichoncus pusillus (Miller, 1958)	Linyphiidae	60698	Heterotrichoncus pusillus (Miller, 1958)	CR						CR	B2a,b, C2a, D1				1		CR
Hilaira excisa (O.P.-Cambridge, 1871)	Linyphiidae	60700	Hilaira excisa (O.P.-Cambridge, 1871)	CR						VU	B2a,b, C2a, D2				1		VU
Hylyphantes graminicola (Sundevall, 1830)	Linyphiidae	60714	Hylyphantes graminicola (Sundevall, 1830)	CR		1		LC		EN	B2a,b, C2a, D1		VU	B1a	1		NT
Hylyphantes nigritus (Simon, 1881)	Linyphiidae	60715	Hylyphantes nigritus (Simon, 1881)	CR								DD			1		DD
Hypomma bituberculatum (Wider, 1834)	Linyphiidae	60717	Hypomma bituberculatum (Wider, 1834)	1		1		LC		1					1		
Hypomma cornutum (Blackwall, 1833)	Linyphiidae	60719	Hypomma cornutum (Blackwall, 1833)	NT		1				LC					1		
Hypselsites jacksoni (O.P.-Cambridge, 1902)	Linyphiidae	60722	Hypselsites jacksoni (O.P.-Cambridge, 1902)			VU	B2a, D2								1		VU

Name of species (Fauna Europea)	Family	ID	Name of species (Platnick 2014, version14.5)	CZ RL	HU RL	PL RL	Crit	RO RL	Crit	SK RL	Crit	RS RL	UA RL	Crit	Status	Endemic	Carp RL
Hypsocephalus pusillus (Menge 1869)	Linyphiidae	60728	Hypsocephalus pusillus (Menge 1869)	EN		EN	B2a, D2			EN	B2a,b, C2a, D1				1		EN
Improphantes complicatus (Emerton, 1882)	Linyphiidae	60731	Improphantes complicatus (Emerton, 1882)			CR	D								1		CR
Improphantes decolor (Westring, 1861)	Linyphiidae	60732	Improphantes decolor (Westring, 1861)			LC				DD					1		LC
Improphantes geniculatus (Kulczyński, 1898)	Linyphiidae	60734	Improphantes geniculatus (Kulczyński, 1898)	VU											1		NT
Improphantes improbulus (Simon, 1929)	Linyphiidae	60736	Improphantes improbulus (Simon, 1929)					1		NT					1		
Improphantes nitidus (Thorell, 1875)	Linyphiidae	60738	Improphantes nitidus (Thorell, 1875)					LC		EN	B2a,b, C2a, D1	DD			1		VU
Incestophantes annulatus (Kulczyński, 1882)	Linyphiidae	60739	Incestophantes annulatus (Kulczyński, 1882)			CR	D	VU	D2	VU					1	x	VU
Incestophantes crucifer (Menge, 1866)	Linyphiidae	60740	Incestophantes crucifer (Menge, 1866)			LC				1					1		
Ipa keyserlingi (Ausserer, 1867)	Linyphiidae	60747	Ipa keyserlingi (Ausserer, 1867)	NT		VU	D			1					1		NT
Ipa terrenus ((L. Koch, 1879)	Linyphiidae	60749	Ipa terrenus ((L. Koch, 1879)	VU				EN	B2a,b	EN	B2a,b, C2a, D1				1		VU
Jacksonella falconeri (Jackson, 1908)	Linyphiidae	60752	Jacksonella falconeri (Jackson, 1908)			VU	B2a, D2								1		VU
Kaestneria dorsalis (Wider, 1834)	Linyphiidae	60754	Kaestneria dorsalis (Wider, 1834)	1		1		LC		1			1		1		
Kaestneria pullata (O.P.-Cambridge, 1863)	Linyphiidae	60755	Kaestneria pullata (O.P.-Cambridge, 1863)	1		1		LC		DD					1		
Kaestneria torrentum (Kulczyński, 1881)	Linyphiidae	60756	Kaestneria torrentum (Kulczyński, 1881)	EN		LC				NT					1	x	NT
Karita paludosa (Duffey, 1971)	Linyphiidae	60757	Karita paludosa (Duffey, 1971)		LC?										1?		
Kratochviliella bicapitata Miller, 1938	Linyphiidae	60759	Kratochviliella bicapitata Miller, 1938			LC				EN	B2a,b, C2a, D1				1		VU
Labulla thoracica (Wider, 1834)	Linyphiidae	60762	Labulla thoracica (Wider, 1834)	NT		LC		1		1			1		1		
Lasiargus hirsutus (Menge, 1869)	Linyphiidae	60763	Lasiargus hirsutus (Menge, 1869)							EN	B2a,b, C2a, D1				1		VU
Lepthyphantes centromeroides carpathicus Dumitrescu & Georgescu, 1970	Linyphiidae	60779	Lepthyphantes centromeroides carpathicus Dumitrescu & Georgescu, 1970					VU	D2						1	x	VU
Lepthyphantes leprosus (Ohlert, 1865)	Linyphiidae	60797	Lepthyphantes leprosus (Ohlert, 1865)	1	LC	1		LC		1		1	1		1		
Lepthyphantes minutus (Blackwall, 1833)	Linyphiidae	60807	Lepthyphantes minutus (Blackwall, 1833)	1		1		LC		1			1		1		
Lepthyphantes nodifer Simon, 1884	Linyphiidae	60810	Lepthyphantes nodifer Simon, 1884	LC						1					1		
Lepthyphantes notabilis Kulczyński, 1887	Linyphiidae	60811	Lepthyphantes notabilis Kulczyński, 1887							NT					1		NT
Leptorhoptrum robustum (Westring, 1851)	Linyphiidae	60826	Leptorhoptrum robustum (Westring, 1851)	1		1		LC		1			1		1		
Lessertia dentichelis (Simon, 1884)	Linyphiidae	60829	Lessertia dentichelis (Simon, 1884)			LC				CR	B2a,b, C2a, D1				1		VU
Lessertinella carpatica Weiss, 1979	Linyphiidae	60830	Lessertinella carpatica Weiss, 1979			EN	B2a, D2	DD		CR	B2a,b, C2a, D1		VU	B1a	1	x	EN
Lessertinella kulczyńskii (Lessert, 1910)	Linyphiidae	60831	Lessertinella kulczyńskii (Lessert, 1910)							CR	B2a,b, C2a, D1				1		CR
Linyphia hortensis Sundevall, 1830	Linyphiidae	60838	Linyphia hortensis Sundevall, 1830	1		1		LC		1		1	1		1		
Linyphia triangularis (Clerck, 1757)	Linyphiidae	60852	Linyphia triangularis (Clerck, 1757)	1	LC	1		1		1			1		1		
Lophomma punctatum (Blackwall, 1841)	Linyphiidae	60854	Lophomma punctatum (Blackwall, 1841)	EN		1		1		LC			DD		1		
Macrargus carpenteri (O.P.-Cambridge, 1894)	Linyphiidae	60856	Macrargus carpenteri (O.P.-Cambridge, 1894)							EN	B2a,b, C2a, D1				1		VU
Macrargus rufus (Wider, 1834)	Linyphiidae	60860	Macrargus rufus (Wider, 1834)	1		1		1		1			1		1		
Mansuphantes arciger (Kulczyński, 1882)	Linyphiidae	60862	Mansuphantes arciger (Kulczyński, 1882)	EN		EN	B2a, D2	1		1			VU	B2a	1		VU
Mansuphantes fragilis (Thorell, 1875)	Linyphiidae	60865	Mansuphantes fragilis (Thorell, 1875)							RE?					1		RE?
Mansuphantes mansuetus (Thorell, 1875)	Linyphiidae	60867	Mansuphantes mansuetus (Thorell, 1875)	NT		1		LC		1		1	1		1		
Maro lehtineni Saaristo, 1971	Linyphiidae	60872	Maro lehtineni Saaristo, 1971							DD					1		DD
Maro lepidus Casemir, 1961	Linyphiidae	60873	Maro lepidus Casemir, 1961			EN	B2a, D			CR					1		EN
Maro minutus O. P.-Cambridge, 1906	Linyphiidae	60874	Maro minutus O. P.-Cambridge, 1906										NT		1		NT
Maro sublestus Falconer, 1915	Linyphiidae	60876	Maro sublestus Falconer, 1915							DD					1		DD
Maso gallicus Simon, 1894	Linyphiidae	60878	Maso gallicus Simon, 1894					1		1					1		
Maso sundevalli (Westring, 1851)	Linyphiidae	60879	Maso sundevalli (Westring, 1851)	1		1		1		1			1		1		
Mecopisthes peusi Wunderlich, 1972	Linyphiidae	60887	Mecopisthes peusi Wunderlich, 1972	CR						DD					1		DD
Mecopisthes silus (O.P.-Cambridge, 1872)	Linyphiidae	60890	Mecopisthes silus (O.P.-Cambridge, 1872)			EN	D								1		EN
Mecynargus longus (Kulczyński, 1882)	Linyphiidae	60894	Mecynargus longus (Kulczyński, 1882)			CR	D			VU					1	x	EN
Mecynargus morulus (O.P.-Cambridge, 1873)	Linyphiidae	60896	Mecynargus morulus (O.P.-Cambridge, 1873)			EN	D			VU					1		EN
Megalepthyphantes collinus (L.Koch, 1872)	Linyphiidae	60901	Megalepthyphantes collinus (L.Koch, 1872)	DD				LC		1					1		LC
Megalepthyphantes nebulosus (Sundeval, 1829)	Linyphiidae	60903	Megalepthyphantes nebulosus (Sundeval, 1829)	1		1		1		1			1		1		
Megalepthyphantes pseudocollinus Saaristo, 1997	Linyphiidae	60904	Megalepthyphantes pseudocollinus Saaristo, 1997	DD						1					1		
Meioneta affinis (Kulczyński, 1898)	Linyphiidae	60905	Agyneta affinis (Kulczyński, 1898)	1		1		1		1			1		1		
Meioneta equestris (L.Koch, 1881)	Linyphiidae	60909	Agyneta equestris (L.Koch, 1881)							NT					1		
Meioneta fuscipalpa (C.L.Koch, 1836)	Linyphiidae	60910	Agyneta fuscipalpa (C.L.Koch, 1836)	EN				DD		1		DD			1		DD
Meioneta gulosa (L.Koch, 1869)	Linyphiidae	60911	Agyneta gulosa (L.Koch, 1869)			1				CR	B2a,b, C2a, D1				1		VU
Meioneta innotabilis (O.P.-Cambridge, 1863)	Linyphiidae	60912	Agyneta innotabilis (O.P.-Cambridge, 1863)	EN		1				VU	B2a,b, C2a, D1				1		NT
Meioneta milleri Thaler, Buchar & Kůrka, 1997	Linyphiidae	60915	Agyneta milleri Thaler, Buchar & Kůrka, 1997					DD		1			DD		1		
Meioneta mollis (O.P.-Cambridge, 1871)	Linyphiidae	60916	Agyneta mollis (O.P.-Cambridge, 1871)	NT						1			DD		1		

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Meioneta mossica Schikora, 1993	Linyphiidae	60917	Agyneta mossica Schikora, 1993							DD			DD		1		DD
Meioneta rurestris (C.L.Koch, 1836)	Linyphiidae	60928	Agyneta rurestris (C.L.Koch, 1836)	1	LC	1		1		1		1	1		1		
Meioneta saxatilis (Blackwall, 1844)	Linyphiidae	60930	Agyneta saxatilis (Blackwall, 1844)	1		1		LC		1					1		
Meioneta similis (Kulczynski, 1926)	Linyphiidae	60931	Agyneta similis (Kulczyński, 1926)					DD							1		DD
Meioneta simplicitarsis (Simon, 1884)	Linyphiidae	60932	Agyneta simplicitarsis (Simon, 1884)	VU				DD		VU	B2a,b, C2a, D1				1		VU
Mermessus trilobatus (Emerton, 1882)	Linyphiidae	60939	Mermessus trilobatus (Emerton, 1882)			1									1		
Metopobactrus ascitus (Kulczyński, 1894)	Linyphiidae	60942	Metopobactrus ascitus (Kulczyński, 1894)	CR						LC					1		VU
Metopobactrus prominulus (O.P.-Cambridge, 1872)	Linyphiidae	60949	Metopobactrus prominulus (O.P.-Cambridge, 1872)			1				1			DD		1		
Micrargus apertus (O.P.-Cambridge, 1871)	Linyphiidae	60954	Micrargus apertus (O.P.-Cambridge, 1871)	DD		LC		1		DD			DD		1		
Micrargus georgescuae Millidge, 1976	Linyphiidae	60958	Micrargus georgescuae Millidge, 1976	1		LC		1		VU	B2a,b, C2a, D1		NT		1		LC
Micrargus herbigradus (Blackwall, 1854)	Linyphiidae	60959	Micrargus herbigradus (Blackwall, 1854)	1		1		LC		1			1		1		
Micrargus subaequalis (Westring, 1851)	Linyphiidae	60963	Micrargus subaequalis (Westring, 1851)	1		1				1					1		
Microctenonyx subitaneus (O.P.-Cambridge, 1875)	Linyphiidae	60965	Microctenonyx subitaneus (O.P.-Cambridge, 1875)					LC		EN	B2a,b, C2a, D1	DD			1		NT
Microlinyphia impigra (O.P.-Cambridge, 1871)	Linyphiidae	60966	Microlinyphia impigra (O.P.-Cambridge, 1871)	NT						VU	B2a,b, C2a, D1				1		NT
Microlinyphia pusilla (Sundevall, 1830)	Linyphiidae	60969	Microlinyphia pusilla (Sundevall, 1830)	1		1		LC		1			1		1		
Microneta viaria (Blackwall, 1841)	Linyphiidae	60973	Microneta viaria (Blackwall, 1841)	1	LC	1		1		1		1	1		1		
Midia midas (Simon, 1884)	Linyphiidae	60997	Midia midas (Simon, 1884)					1		EN	B2a,b, C2a, D1				1		VU
Minicia marginella (Wider, 1834)	Linyphiidae	61005	Minicia marginella (Wider, 1834)	1		LC		1		1			DD		1		
Minyriolus pusillus (Wider, 1834)	Linyphiidae	61011	Minyriolus pusillus (Wider, 1834)	1		1				1			1		1		
Mioxena blanda (Simon, 1884)	Linyphiidae	61012	Mioxena blanda (Simon, 1884)	EN						CR	B2a,b, C2a, D1				1		VU
Moebelia penicillata (Westring, 1851)	Linyphiidae	61014	Moebelia penicillata (Westring, 1851)	NT		1				LC					1		
Mughiphantes cornutus (Schenkel, 1927)	Linyphiidae	61017	Mughiphantes cornutus (Schenkel, 1927)							RE?					1		RE?
Mughiphantes mughi (Fickert, 1875)	Linyphiidae	61030	Mughiphantes mughi (Fickert, 1875)	1		1		LC		1			1		1		
Mughiphantes pulcher (Kulczyński, 1881)	Linyphiidae	61032	Mughiphantes pulcher (Kulczyński, 1881)			VU	D			1					1		NT
Mughiphantes varians (Kulczyński, 1882)	Linyphiidae	61042	Mughiphantes varians (Kulczyński, 1882)			EN	D			NT					1	x	VU
Nematogmus sanguinolentus (Walckenaer, 1841)	Linyphiidae	61045	Nematogmus sanguinolentus (Walckenaer, 1841)	NT				1		NT					1		LC
Neriene clathrata (Sundevall, 1830)	Linyphiidae	61048	Neriene clathrata (Sundevall, 1830)	1		1		1		1			1		1		
Neriene emphana (Walckenaer, 1841)	Linyphiidae	61049	Neriene emphana (Walckenaer, 1841)	1		1		1		1			1		1		
Neriene furtiva (O.P.-Cambridge, 1871)	Linyphiidae	61050	Neriene furtiva (O.P.-Cambridge, 1871)					LC		LC			1		1		LC
Neriene montana (Clerck, 1757)	Linyphiidae	61053	Neriene montana (Clerck, 1757)	1		1		LC		1		1	1		1		
Neriene peltata (Wider, 1834)	Linyphiidae	61055	Neriene peltata (Wider, 1834)	1		1		LC		1			1		1		
Neriene radiata (Walckenaer, 1842)	Linyphiidae	61057	Neriene radiata (Walckenaer, 1842)	1		1		LC		1		1	1		1		
Notioscopus sarcinatus (O.P.-Cambridge, 1872)	Linyphiidae	61060	Notioscopus sarcinatus (O.P.-Cambridge, 1872)	DD		1		1		1					1		
Nusoncus nasutus (Schenkel, 1925)	Linyphiidae	61061	Nusoncus nasutus (Schenkel, 1925)			LC				VU	B2a,b, C2a, D1		DD		1		NT
Obscuriphantes obscurus (Blackwall, 1841)	Linyphiidae	61063	Obscuriphantes obscurus (Blackwall, 1841)	EN		1		1		1			1		1		
Oedothorax agrestis (Blackwall, 1853)	Linyphiidae	61065	Oedothorax agrestis (Blackwall, 1853)	1	LC	1		LC		1			1		1		
Oedothorax apicatus (Blackwall, 1850)	Linyphiidae	61066	Oedothorax apicatus (Blackwall, 1850)	1		1		1		1			1		1		
Oedothorax fuscus (Blackwall, 1834)	Linyphiidae	61068	Oedothorax fuscus (Blackwall, 1834)	1		1		1		1					1		
Oedothorax gibbifer (Kulczyński, 1882)	Linyphiidae	61069	Oedothorax gibbifer (Kulczyński, 1882)	VU		VU	D	1		1			VU		1		NT
Oedothorax gibbosus (Blackwall, 1841)	Linyphiidae	61070	Oedothorax gibbosus (Blackwall, 1841)	1		1		LC		1			1		1		
Oedothorax insignis (Bösenberg, 1902)	Linyphiidae	61071	Oedothorax insignis (Bösenberg, 1902)					1?							?		
Oedothorax retusus (Westring, 1851)	Linyphiidae	61075	Oedothorax retusus (Westring, 1851)	1		1		1		1		1	1		1		
Oreoneta montigena (L.Koch, 1872)	Linyphiidae	61082	Oreoneta montigena (L.Koch, 1872)							DD					1		DD
Oreoneta tatrica (Kulczyński, 1915)	Linyphiidae	61085	Oreoneta tatrica (Kulczyński, 1915)			EN	D			EN	B2a,b, C2a, D1				1		EN
Oreonetides glacialis (L.Koch, 1872)	Linyphiidae	61087	Oreonetides glacialis (L.Koch, 1872)			EN	D			VU	B2a,b, C2a, D1				1		EN
Oreonetides vaginatus (Thorell, 1872)	Linyphiidae	61089	Oreonetides vaginatus (Thorell, 1872)			LC				VU	B2a,b, C2a, D1				1		NT
Oryphantes angulatus (O.P.-Cambridge, 1881)	Linyphiidae	61090	Oryphantes angulatus (O.P.-Cambridge, 1881)			VU	B2a, D2								1		VU
Ostearius melanopygius (O.P.-Cambridge, 1879)	Linyphiidae	61092	Ostearius melanopygius (O.P.-Cambridge, 1879)	1						1					1		
Palliduphantes alutacius (Simon, 1884)	Linyphiidae	61094	Palliduphantes alutacius (Simon, 1884)	DD		1				1					1		
Palliduphantes antroniensis (Schenkel, 1933)	Linyphiidae	61096	Palliduphantes antroniensis (Schenkel, 1933)							EN	B2a,b, C2a, D1				1		EN
Palliduphantes insignis (O.P.-Cambridge, 1913)	Linyphiidae	61117	Palliduphantes insignis (O.P.-Cambridge, 1913)	NT				1		1					1		
Palliduphantes istrianus (Kulczyński, 1914)	Linyphiidae	61118	Palliduphantes istrianus (Kulczyński, 1914)					1							1		
Palliduphantes milleri (Staręga, 1972)	Linyphiidae	61127	Palliduphantes milleri (Staręga, 1972)			EN	D	1		NT			NT		1	X	VU
Palliduphantes pallidus (O.P.-Cambridge, 1871)	Linyphiidae	61131	Palliduphantes pallidus (O.P.-Cambridge, 1871)	1				1		1		1	1		1		
Palliduphantes pillichi (Kulczyński, 1915)	Linyphiidae	61133	Palliduphantes pillichi (Kulczyński, 1915)							EN	B2a,b, C2a, D1				1		VU
Palliduphantes spelaeorum (Kulczynski, 1914)	Linyphiidae	61138	Palliduphantes spelaeorum (Kulczynski, 1914)									VU			1		VU

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Palliduphantes trnovensis (Drensky, 1931)	Linyphiidae	61141	Palliduphantes trnovensis (Drensky, 1931)									EN			1		EN
Panamomops affinis Miller & Kratochvil, 1939	Linyphiidae	61142	Panamomops affinis Miller & Kratochvil, 1939							NT					1		NT
Panamomops fagei Miller & Kratochvil, 1939	Linyphiidae	61144	Panamomops fagei Miller & Kratochvil, 1939	1						1					1		
Panamomops inconspicuus (Miller & Valešova, 1964)	Linyphiidae	61146	Panamomops inconspicuus (Miller & Valešova, 1964)	EN				1		EN	B2a,b, C2a, D1				1		VU
Panamomops latifrons Miller, 1959	Linyphiidae	61147	Panamomops latifrons Miller, 1959							NT					1		NT
Panamomops mengei Simon, 1926	Linyphiidae	61148	Panamomops mengei Simon, 1926	NT						VU					1		NT
Panamomops palmgreni Thaler, 1973	Linyphiidae	61150	Panamomops palmgreni Thaler, 1973							DD					1		DD
Panamomops strandi Kolosváry, 1934a	Linyphiidae	61152	Panamomops strandi Kolosváry, 1934a												?		
Panamomops sulcifrons (Wider, 1834)	Linyphiidae	61153	Panamomops sulcifrons (Wider, 1834)							VU	B2a,b, C2a, D1				1		NT
Parapelecopsis nemoralis (Blackwall, 1841)	Linyphiidae	61158	Parapelecopsis nemoralis (Blackwall, 1841)		LC	1									1		
Pelecopsis elongata (Wider, 1834)	Linyphiidae	61167	Pelecopsis elongata (Wider, 1834)	EN		1		1		1			1		1		
Pelecopsis loksai Szinetar & Samu 2003	Linyphiidae	61174	Pelecopsis loksai Szinetar & Samu 2003							CR	B2a,b, C2a, D1				1		CR
Pelecopsis mengei (Simon, 1884)	Linyphiidae	61176	Pelecopsis mengei (Simon, 1884)	VU		1				VU	B2a,b, C2a, D1				1		NT
Pelecopsis parallela (Wider, 1834)	Linyphiidae	61182	Pelecopsis parallela (Wider, 1834)	DD		1				VU	B2a,b, C2a, D1				1		NT
Pelecopsis radicicola (L.Koch, 1872)	Linyphiidae	61185	Pelecopsis radicicola (L.Koch, 1872)			1		1		1			1		1		
Peponocranium orbiculatum (O.P.-Cambridge, 1882)	Linyphiidae	61193	Peponocranium orbiculatum (O.P.-Cambridge, 1882)	EN		LC				VU	B2a,b, C2a, D1				1		NT
Peponocranium praeceps Miller, 1943	Linyphiidae	61194	Peponocranium praeceps Miller, 1943	EN		VU	D			NT					1		VU
Piniphantes pinicola (Simon, 1884)	Linyphiidae	61198	Piniphantes pinicola (Simon, 1884)										DD		1		DD
Pityohyphantes phrygianus (C.L.Koch, 1836)	Linyphiidae	61200	Pityohyphantes phrygianus (C.L.Koch, 1836)	1		1				1			1		1		
Pocadicnemis carpatica (Chyzer, 1894)	Linyphiidae	61202	Pocadicnemis carpatica (Chyzer, 1894)	NT		VU	D	DD		VU	B2a,b, C2a, D1		VU	B1a	1		VU
Pocadicnemis juncea Locket & Millidge, 1953	Linyphiidae	61204	Pocadicnemis juncea Locket & Millidge, 1953	1						1					1		
Pocadicnemis pumila (Blackwall, 1841)	Linyphiidae	61205	Pocadicnemis pumila (Blackwall, 1841)	1		1		LC		1			1		1		
Poeciloneta variegata (Blackwall, 1841)	Linyphiidae	61206	Poeciloneta variegata (Blackwall, 1841)	NT		1		LC		1			1		1		
Porrhomma campbelli F.O.P.-Cambridge, 1894	Linyphiidae	61211	Porrhomma campbelli F.O.P.-Cambridge, 1894			1				DD					1		
Porrhomma convexum (Westring, 1861)	Linyphiidae	61212	Porrhomma convexum (Westring, 1861)		LC	LC		1		1		1	LC		1		
Porrhomma egeria Simon, 1884	Linyphiidae	61214	Porrhomma egeria Simon, 1884			LC				1			LC		1		
Porrhomma errans (Blackwall, 1841)	Linyphiidae	61215	Porrhomma errans (Blackwall, 1841)	DD	LC			1		NT			DD		1		
Porrhomma lativelum Tretzel, 1956	Linyphiidae	61219	Porrhomma microps (Roewer, 1931)												syn		
Porrhomma microphthalmum (O.P.-Cambridge, 1871)	Linyphiidae	61221	Porrhomma microphthalmum (O.P.-Cambridge, 1871)	VU		1				NE					1		
Porrhomma microps (Roewer, 1931)	Linyphiidae	61222	Porrhomma microps (Roewer, 1931)	DD						NE			DD		1		DD
Porrhomma montanum Jackson, 1913	Linyphiidae	61223	Porrhomma montanum Jackson, 1913			1		LC		VU	B2a,b, C2a, D1				1		LC
Porrhomma myops Simon, 1884	Linyphiidae	61224	Porrhomma myops Simon, 1884							VU	B2a,b, C2a, D1				1		NT
Porrhomma oblitum (O.P.-Cambridge, 1870)	Linyphiidae	61225	Porrhomma oblitum (O.P.-Cambridge, 1870)	1						1					1		
Porrhomma pallidum Jackson, 1913	Linyphiidae	61228	Porrhomma pallidum Jackson, 1913	1		1		1		NT					1		
Porrhomma profundum M.Dahl, 1939	Linyphiidae	61229	Porrhomma profundum M.Dahl, 1939	VU	LC					NT					1		NT
Porrhomma pygmaeum (Blackwall, 1834)	Linyphiidae	61230	Porrhomma pygmaeum (Blackwall, 1834)	1		1		1		1			1		1		
Porrhomma rosenhaueri (L.Koch, 1872)	Linyphiidae	61232	Porrhomma rosenhaueri (L.Koch, 1872)		LC					NE					1		DD
Prinerigone vagans (Audouin, 1826)	Linyphiidae	61240	Prinerigone vagans (Audouin, 1826)	1				LC		EN	B2a,b, C2a, D1	DD	DD		1		NT
Saaristoa abnormis (Blackwall, 1841)	Linyphiidae	61246	Saaristoa abnormis (Blackwall, 1841)	VU						NE					1		DD
Saaristoa firma (O.P.-Cambridge, 1905)	Linyphiidae	61247	Saaristoa firma (O.P.-Cambridge, 1905)	EN						EN	B2a,b, C2a, D1				1		VU
Saloca diceros (O.P.-Cambridge, 1871)	Linyphiidae	61248	Saloca diceros (O.P.-Cambridge, 1871)			VU	D			VU					1		LC
Saloca kulczynskii Miller & Kratochvil, 1939	Linyphiidae	61250	Saloca kulczynskii Miller & Kratochvil, 1939	VU		1		1		1					1		
Sauron rayi (Simon, 1881)	Linyphiidae	61253	Sauron rayi (Simon, 1881)			EN	D			NT					1		VU
Savignia frontata Blackwall, 1833	Linyphiidae	61254	Savignia frontata Blackwall, 1833			1									1		
Scotargus pilosus Simon, 1913	Linyphiidae	61265	Scotargus pilosus Simon, 1913			1				EN	B2a,b, C2a, D1		DD		1		NT
Scotinotylus antennatus (O.P.-Cambridge, 1875)	Linyphiidae	61269	Scotinotylus antennatus (O.P.-Cambridge, 1875)			CR	B2a, D			VU	B2a,b, C2a, D1				1		EN
Scutpelecopsis loricata Duma & Tanasevitch, 2011	Linyphiidae	Not listed yet	Scutpelecopsis loricata Duma & Tanasevitch, 2011					VU	D2						1	x	VU
Silometopus bonessi Casemir, 1970	Linyphiidae	61288	Silometopus bonessi Casemir, 1970							DD					1		DD
Silometopus elegans (O.P.-Cambridge, 1872)	Linyphiidae	61291	Silometopus elegans (O.P.-Cambridge, 1872)			1				VU					1		LC
Silometopus reussi (Thorell, 1871)	Linyphiidae	61294	Silometopus reussi (Thorell, 1871)	VU						VU					1		NT
Sintula corniger (Blackwall, 1856)	Linyphiidae	61300	Sintula corniger (Blackwall, 1856)	VU		1		1		1			NT		1		
Sintula retroversus (O.P.-Cambridge, 1875)	Linyphiidae	61305	Sintula retroversus (O.P.-Cambridge, 1875)							RE?					1		RE?
Sintula spiniger (Balogh, 1935)	Linyphiidae	61307	Sintula spiniger (Balogh, 1935)					1		EN					1		VU
Sisicus apertus (Holm, 1939)	Linyphiidae	61308	Sisicus apertus (Holm, 1939)							VU					1		NT
Stemonyphantes lineatus (Linnaeus, 1758)	Linyphiidae	61311	Stemonyphantes lineatus (Linnaeus, 1758)	1		1		1		1			1		1		
Styloctetor romanus (O.P.-Cambridge, 1872)	Linyphiidae	61313	Styloctetor romanus (O.P.-Cambridge, 1872)	EN				DD		CR	B2a,b, C2a, D1				1		EN

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Styloctetor stativus (Simon, 1881)	Linyphiidae	61314	Styloctetor stativus (Simon, 1881)	DD		1				1					1		
Syedra gracilis (Menge, 1869)	Linyphiidae	61317	Syedra gracilis (Menge, 1869)		LC	1				1					1		
Syedra myrmicarum (Kulczyński, 1882)	Linyphiidae	61318	Syedra myrmicarum (Kulczyński, 1882)			EN	B2a, D			NT					1		NT
Tallusia experta (O.P.-Cambridge, 187	Linyphiidae	61321	Tallusia experta (O.P.-Cambridge, 187	1		1				1			1		1		
Tapinocyba affinis Lessert, 1907	Linyphiidae	61328	Tapinocyba affinis Lessert, 1907	1		1		1		1			1		1		
Tapinocyba barsica Kolosváry, 1934a	Linyphiidae	61330	Tapinocyba barsica Kolosváry, 1934							1?					?		
Tapinocyba biscissa (O.P.-Cambridge, 1872)	Linyphiidae	61332	Tapinocyba biscissa (O.P.-Cambridge, 1872)			1				NT					1		
Tapinocyba insecta (L.Koch, 1869)	Linyphiidae	61336	Tapinocyba insecta (L.Koch, 1869)	1	LC	1				1			1		1		
Tapinocyba pallens (O.P.-Cambridge, 1872)	Linyphiidae	61342	Tapinocyba pallens (O.P.-Cambridge, 1872)			1				NT			DD		1		
Tapinocyba praecox (O. P.-Cambridge, 1873)	Linyphiidae	61343	Tapinocyba praecox (O. P.-Cambridge, 1873)					DD							1		
Tapinocyba silvestris Georgescu, 1973	Linyphiidae	61344	Tapinocyba silvestris Georgescu, 1973									VU?			1		
Tapinocyboides pygmaeus (Menge, 1869)	Linyphiidae	61347	Tapinocyboides pygmaeus (Menge, 1869)	NT	LC	LC		1		1					1		
Tapinopa longidens (Wider, 1834)	Linyphiidae	61349	Tapinopa longidens (Wider, 1834)	VU		1				1					1		
Taranucnus bihari Fage, 1931	Linyphiidae	61349	Taranucnus bihari Fage, 1931			CR	D	NT		VU	B2a,b, C2a, D1		EN	B1a	1	x	VU
Taranucnus setosus (O.P.-Cambridge, 1863)	Linyphiidae	61350	Taranucnus setosus (O.P.-Cambridge, 1863)			LC				EN	B2a,b, C2a, D1		DD		1		NT
Tenuiphantes alacris (Blackwall, 1853)	Linyphiidae	61353	Tenuiphantes alacris (Blackwall, 1853)	1		1		1		1			1		1		
Tenuiphantes cristatus (Menge, 1866)	Linyphiidae	61355	Tenuiphantes cristatus (Menge, 1866)	1		1		LC		1			1		1		
Tenuiphantes flavipes (Blackwall, 1854)	Linyphiidae	61357	Tenuiphantes flavipes (Blackwall, 1854)	1	LC	1		LC		1		1	1		1		
Tenuiphantes fogarasensis (Weiss, 1986)	Linyphiidae	61359	Tenuiphantes fogarasensis (Weiss, 1986)					VU	D2						1	x	VU
Tenuiphantes jacksoni (Schenkel, 1925)	Linyphiidae	61362	Tenuiphantes jacksoni (Schenkel, 1925)					1		1?					1		
Tenuiphantes mengei (Kulczyński, 1887)	Linyphiidae	61365	Tenuiphantes mengei (Kulczyński, 1887)	1		1		LC		1		1	1		1		
Tenuiphantes retezaticus (Ruzicka, 1985)	Linyphiidae	61369	Tenuiphantes retezaticus (Ruzicka, 1985)					VU	D2						1	x	VU
Tenuiphantes tenebricola (Wider, 1834)	Linyphiidae	61372	Tenuiphantes tenebricola (Wider, 1834)	1		1		LC		1		1	1		1		
Tenuiphantes tenuis (Blackwall, 1852)	Linyphiidae	61374	Tenuiphantes tenuis (Blackwall, 1852)	1		1		LC		1		1	1		1		
Tenuiphantes zimmermanni (Bertkau, 1890)	Linyphiidae	61375	Tenuiphantes zimmermanni (Bertkau, 1890)	VU		1		LC		LC					1		LC
Theonina cornix (Simon, 1881)	Linyphiidae	61378	Theonina cornix (Simon, 1881)	NT						NT					1		NT
Theonina kratochvili Miller & Weiss, 1979	Linyphiidae	61379	Theonina kratochvili Miller & Weiss, 1979	VU						VU	B2a,b, C2a, D1				1		VU
Thyreosthenius biovatus (O.P.-Cambridge, 1875)	Linyphiidae	61380	Thyreosthenius biovatus (O.P.-Cambridge, 1875)	CR		1		DD		VU	B2a,b, C2a, D1				1		NT
Thyreosthenius parasiticus (Westring, 1851)	Linyphiidae	61381	Thyreosthenius parasiticus (Westring, 1851)	1		1		LC		1		1	1		1		
Tiso aestivus (L.Koch, 1872)	Linyphiidae	61385	Tiso aestivus (L.Koch, 1872)	EN						CR	B2a,b, C2a, D1				1		EN
Tiso strandi Kolosváry, 1934a	Linyphiidae	61386	Tiso strandi Kolosváry, 1934a							1?					?		
Tiso vagans (Blackwall, 1834)	Linyphiidae	61387	Tiso vagans (Blackwall, 1834)	1		1		1		1			DD		1		
Tmeticus affinis (Blackwall, 1855)	Linyphiidae	61388	Tmeticus affinis (Blackwall, 1855)							1					1		
Trematocephalus cristatus (Wider, 1834)	Linyphiidae	61390	Trematocephalus cristatus (Wider, 1834)	1		1				1					1		
Trichoncoides piscator (Simon, 1884)	Linyphiidae	61393	Trichoncoides piscator (Simon, 1884)	CR	NT					EN	B2a,b, C2a, D1				1		EN
Trichoncus affinis Kulczyński, 1894	Linyphiidae	61394	Trichoncus affinis Kulczyński, 1894	VU	LC	CR	D			NT			DD		1		NT
Trichoncus auritus (L.Koch, 1869)	Linyphiidae	61396	Trichoncus auritus (L.Koch, 1869)	VU						1					1		NT
Trichoncus hackmani Millidge, 1955	Linyphiidae	61398	Trichoncus hackmani Millidge, 1955	EN				NT		VU	B2a,b, C2a, D1				1		VU
Trichoncus saxicola (O. P.-Cambridge, 1861)	Linyphiidae	61404	Trichoncus saxicola (O. P.-Cambridge, 1861)					LC							1		LC
Trichoncus sordidus Simon, 1884	Linyphiidae	61407	Trichoncus sordidus Simon, 1884							CR	B2a,b, C2a, D1				1		CR
Trichopterna cito (O.P.-Cambridge, 1872)	Linyphiidae	61412	Trichopterna cito (O.P.-Cambridge, 1872)	LC				1		LC					1		
Trichopternoides thorelli (Westring, 1861)	Linyphiidae	61416	Trichopternoides thorelli (Westring, 1861)							CR	B2a,b, C2a, D1				1		VU
Troglohyphantes herculanus (Kulczyński, 1894)	Linyphiidae	61467	Troglohyphantes herculanus (Kulczyński, 1894)					1							1	x	
Troglohyphantes jeanneli Dumitrescu & Georgescu, 1970	Linyphiidae	61471	Troglohyphantes jeanneli Dumitrescu & Georgescu, 1970					VU	D2						1	x	VU
Troglohyphantes orghidani Dumitrescu & Georgescu, 1977	Linyphiidae	61492	Troglohyphantes orghidani Dumitrescu & Georgescu, 1977					VU	D2						1	x	VU
Troglohyphantes racovitzai Dumitrescu, 1970	Linyphiidae	61505	Troglohyphantes racovitzai Dumitrescu, 1970					VU	D2						1	x	VU
Troxochrus cirrifrons (O. P.-Cambridge, 1871)	Linyphiidae	61538	Troxochrus cirrifrons (O. P.-Cambridge, 1871)			1									1		
Troxochrus scabriculus (Westring, 1851)	Linyphiidae	61540	Troxochrus scabriculus (Westring, 1851)			1		1		1		1			1		
Typhochrestus digitatus (O.P.-Cambridge, 1872)	Linyphiidae	61554	Typhochrestus digitatus (O.P.-Cambridge, 1872)	EN						NT					1		NT
Walckenaeria acuminata Blackwall, 1833	Linyphiidae	61571	Walckenaeria acuminata Blackwall, 1833	DD	LC	1				1					1		
Walckenaeria alticeps (Denis, 1952)	Linyphiidae	61574	Walckenaeria alticeps (Denis, 1952)	1		1				1			1		1		
Walckenaeria antica (Wider, 1834)	Linyphiidae	61577	Walckenaeria antica (Wider, 1834)	1	LC	1		LC		1			1		1		
Walckenaeria atrotibialis (O.P.-Cambridge, 1878)	Linyphiidae	61412	Walckenaeria atrotibialis (O.P.-Cambridge, 1878)	1	LC	1				1			1		1		
Walckenaeria capito (Westring, 1861)	Linyphiidae	61582	Walckenaeria capito (Westring, 1861)	NT		1				1					1		

Name of species (Fauna Europea)	Family	ID	Name of species (Platnick 2014, version14.5)	CZ RL	HU RL	PL RL	Crit	RO RL	Crit	SK RL	Crit	RS RL	UA RL	Crit	Status	Endemic	Carp RL
Walckenaeria corniculans (O.P.-Cambridge, 1875)	Linyphiidae	61589	Walckenaeria corniculans (O.P.-Cambridge, 1875)	1						1					1		
Walckenaeria cucullata (C.L.Koch, 1836)	Linyphiidae	61591	Walckenaeria cucullata (C.L.Koch, 1836)	1		1		LC		1			1		1		
Walckenaeria cuspidata Blackwall, 1833	Linyphiidae	61593	Walckenaeria cuspidata Blackwall, 1833			1				1			1		1		
Walckenaeria dysderoides (Wider, 1834)	Linyphiidae	61598	Walckenaeria dysderoides (Wider, 1834)	1		1		1		1					1		
Walckenaeria furcillata (Menge, 1869)	Linyphiidae	61602	Walckenaeria furcillata (Menge, 1869)	1		1		DD		1			1		1		
Walckenaeria incisa (O.P.-Cambridge, 1871)	Linyphiidae	61609	Walckenaeria incisa (O.P.-Cambridge, 1871)							VU	B2a,b, C2a, D1				1		VU
Walckenaeria kochi (O.P.-Cambridge, 1872)	Linyphiidae	61615	Walckenaeria kochi (O.P.-Cambridge, 1872)	DD		1		LC		1			1		1		
Walckenaeria mitrata (Menge, 1868)	Linyphiidae	61620	Walckenaeria mitrata (Menge, 1868)	1		1		1		1			1		1		
Walckenaeria monoceros (Wider, 1834)	Linyphiidae	61621	Walckenaeria monoceros (Wider, 1834)	EN						VU	B2a,b, C2a, D1				1		VU
Walckenaeria nodosa (O.P.-Cambridge, 1873)	Linyphiidae	61622	Walckenaeria nodosa (O.P.-Cambridge, 1873)	DD		1				DD					1		DD
Walckenaeria nudipalpis (Westring, 1851)	Linyphiidae	61623	Walckenaeria nudipalpis (Westring, 1851)	1	LC	1		1		1		1	1		1		
Walckenaeria obtusa Blackwall, 1836	Linyphiidae	61624	Walckenaeria obtusa Blackwall, 1836	1		1		LC		1			1		1		
Walckenaeria simplex (Chyzer, 1894)	Linyphiidae	61631	Walckenaeria simplex (Chyzer, 1894)							1					1		
Walckenaeria suspecta (Kulczyński, 1882)	Linyphiidae	61634	Walckenaeria suspecta (Kulczyński, 1882)			CR	D			EN	B2a,b, C2a, D1				1	x	EN
Walckenaeria unicornis O.P.-Cambridge, 1861	Linyphiidae	61636	Walckenaeria unicornis O.P.-Cambridge, 1861	1						NT					1		LC
Walckenaeria vigilax (Blackwall, 1853)	Linyphiidae	61638	Walckenaeria vigilax (Blackwall, 1853)	1		1		1		1					1		
Zornella cultrigera (L. Koch, 1879)	Linyphiidae	61647	Zornella cultrigera (L. Koch, 1879)										1		1		
Meta menardi (Latreille, 1804)	Tetragnathidae	66032	Meta menardi (Latreille, 1804)	1		1		LC		1		1	1		1		
Metellina mengei (Blackwall, 1869)	Tetragnathidae	66038	Metellina mengei (Blackwall, 1869)	1		1		1		1		1	1		1		
Metellina merianae (Scopoli, 1763)	Tetragnathidae	66040	Metellina merianae (Scopoli, 1763)	1	LC	1		1		1		1	1		1		
Metellina segmentata (Clerck, 1757)	Tetragnathidae	66041	Metellina segmentata (Clerck, 1757)	1		1		1		1		1	1		1		
Pachygnatha clercki Sundevall, 1823	Tetragnathidae	66043	Pachygnatha clercki Sundevall, 1823	1		1		LC		1			1		1		
Pachygnatha degeeri Sundevall, 1830	Tetragnathidae	66045	Pachygnatha degeeri Sundevall, 1830	1	LC	1		LC		1			1		1		
Pachygnatha listeri Sundevall, 1830	Tetragnathidae	66046	Pachygnatha listeri Sundevall, 1830	1	LC	1		1		1			1		1		
Tetragnatha dearmata Thorell, 1873	Tetragnathidae	66054	Tetragnatha dearmata Thorell, 1873	1		1				NT					1		
Tetragnatha extensa (Linnaeus, 1758)	Tetragnathidae	66058	Tetragnatha extensa (Linnaeus, 1758)	1		1		1		1		1	1		1		
Tetragnatha montana Simon, 1874	Tetragnathidae	66062	Tetragnatha montana Simon, 1874	1		1		1		1		1	1		1		
Tetragnatha nigrita Lendl, 1886	Tetragnathidae	66063	Tetragnatha nigrita Lendl, 1886	1		1		1		1					1		
Tetragnatha obtusa C.L.Koch, 1837	Tetragnathidae	66068	Tetragnatha obtusa C.L.Koch, 1837	1		1		1		1			1		1		
Tetragnatha obtusa intermedia Kulczynski, 1891	Tetragnathidae	66066	Tetragnatha intermedia Kulczynski, 1891									DD			1		
Tetragnatha pinicola L.Koch, 1870	Tetragnathidae	66069	Tetragnatha pinicola L.Koch, 1870	1		1		LC		1			1		1		
Tetragnatha striata L.Koch, 1862	Tetragnathidae	66072	Tetragnatha striata L.Koch, 1862	VU						EN	B2a,b, C2a, D1				1		VU
Aculepeira ceropegia (Walckenaer, 1802)	Araneidae	55077	Aculepeira ceropegia (Walckenaer, 1802)	1	LC	1		1		1			1		1		
Agalenatea redii (Scopoli, 1763)	Araneidae	55080	Agalenatea redii (Scopoli, 1763)	1	LC	1		1		1			1		1		
Araneus alsine (Walckenaer, 1802)	Araneidae	55081	Araneus alsine (Walckenaer, 1802)	EN		1		LC		1			1		1		
Araneus angulatus Clerck, 1757	Araneidae	55095	Araneus angulatus Clerck, 1757			1				1		1			1		
Araneus circe (Audouin, 1826)	Araneidae	55100	Araneus circe (Audouin, 1826)					LC		LC			DD		1		LC
Araneus diadematus Clerck, 1757	Araneidae	55107	Araneus diadematus Clerck, 1757	1	LC	1		LC		1		1	1		1		
Araneus grossus (C.L.Koch, 1844)	Araneidae	55108	Araneus grossus (C.L.Koch, 1844)							VU					1		NT
Araneus marmoreus Clerck, 1757	Araneidae	55111	Araneus marmoreus Clerck, 1757	1	LC	1		1		1			1		1		
Araneus nordmanni (Thorell, 1870)	Araneidae	55112	Araneus nordmanni (Thorell, 1870)			VU	D	LC		EN	B2a,b, C2a, D1		EN	B1a	1		VU
Araneus quadratus Clerck, 1757	Araneidae	55118	Araneus quadratus Clerck, 1757	1	LC	1		1		1			1		1		
Araneus saevus (L.Koch, 1872)	Araneidae	55120	Araneus saevus (L.Koch, 1872)			1?		LC		CR	B2a,b, C2a, D1				1		VU
Araneus sturmi (Hahn, 1831)	Araneidae	55122	Araneus sturmi (Hahn, 1831)	1		1				1			1		1		
Araneus triguttatus (Fabricius, 1775)	Araneidae	55124	Araneus triguttatus (Fabricius, 1775)	1		1		1		1			1		1		
Araniella alpica (L.Koch, 1869)	Araneidae	55127	Araniella alpica (L.Koch, 1869)	1		LC		1		1			1		1		
Araniella cucurbitina (Clerck, 1757)	Araneidae	55128	Araniella cucurbitina (Clerck, 1757)	1	LC	1		1		1		1	1		1		
Araniella displicata (Hentz, 1847)	Araneidae	55129	Araniella displicata (Hentz, 1847)	NT		1				1					1		
Araniella inconspicua (Simon, 1874)	Araneidae	55130	Araniella inconspicua (Simon, 1874)	DD						1					1		
Araniella opisthographa (Kulczyński, 1905)	Araneidae	55132	Araniella opisthographa (Kulczyński, 1905)	1		1		LC		1					1		
Araniella proxima (Kulczyński, 1885)	Araneidae	55133	Araniella proxima (Kulczyński, 1885)			VU	D			VU	B2a,b, C2a, D1				1		VU
Argiope bruennichi (Scopoli, 1772)	Araneidae	55137	Argiope bruennichi (Scopoli, 1772)	1	LC	1		1		1		1	1		1		
Argiope lobata (Pallas, 1772)	Araneidae	55138	Argiope lobata (Pallas, 1772)							RE?					1		RE?
Cercidia prominens (Westring, 1851)	Araneidae	55140	Cercidia prominens (Westring, 1851)	1	LC	1		LC		1			1		1		
Cyclosa conica (Pallas, 1772)	Araneidae	55149	Cyclosa conica (Pallas, 1772)	1		1		1		1		1	1		1		

Name of species (Fauna Europea)	Family	ID	Name of species (Platnick 2014, version14.5)	CZ RL	HU RL	PL RL	Crit	RO RL	Crit	SK RL	Crit	RS RL	UA RL	Crit	Status	Endemic	Carp RL
Cyclosa oculata (Walckenaer, 1802)	Araneidae	55153	Cyclosa oculata (Walckenaer, 1802)	DD		1		1		1					1		
Gibbaranea bituberculata (Walckenaer, 1802)	Araneidae	55162	Gibbaranea bituberculata (Walckenaer, 1802)	1		1		1		1		1	1		1		
Gibbaranea gibbosa (Walckenaer, 1802)	Araneidae	55164	Gibbaranea gibbosa (Walckenaer, 1802)	LC				LC		1			1		1		
Gibbaranea omoeda (Thorell, 1870)	Araneidae	55166	Gibbaranea omoeda (Thorell, 1870)	EN		VU	D	LC		1					1		LC
Gibbaranea ullrichi (Hahn, 1835)	Araneidae	55168	Gibbaranea ullrichi (Hahn, 1835)	VU						NT					1		NT
Hypsosinga albovittata (Westring, 1851)	Araneidae	55170	Hypsosinga albovittata (Westring, 1851)	NT						1					1		
Hypsosinga heri (Hahn, 1831)	Araneidae	55171	Hypsosinga heri (Hahn, 1831)	1						1			1		1		
Hypsosinga pygmaea (Sundevall, 1831)	Araneidae	55172	Hypsosinga pygmaea (Sundevall, 1831)	1		1				1		1	1		1		
Hypsosinga sanguinea (C.L.Koch, 1844)	Araneidae	55173	Hypsosinga sanguinea (C.L.Koch, 1844)	1	LC	1				1			1		1		
Larinioides cornutus (Clerck, 1757)	Araneidae	55178	Larinioides cornutus (Clerck, 1757)	1		1		1		1			1		1		
Larinioides ixobolus (Thorell, 1873)	Araneidae	55180	Larinioides ixobolus (Thorell, 1873)	1		1		LC		1			1		1		
Larinioides patagiatus (Clerck, 1757)	Araneidae	55182	Larinioides patagiatus (Clerck, 1757)	1		1		1		1			1		1		
Larinioides sclopetarius (Clerck, 1757)	Araneidae	55183	Larinioides sclopetarius (Clerck, 1757)	1		1				1			1		1		
Larinioides suspicax (O. P.-Cambridge, 1876)	Araneidae	55184	Larinioides suspicax (O. P.-Cambridge, 1876)	1		VU	D			1			DD		1		LC
Leviellus thorelli (Ausserer, 1871)	Araneidae	55186	Leviellus thorelli (Ausserer, 1871)							VU	B2a,b, C2a, D1	1			1		NT
Mangora acalypha (Walckenaer, 1802)	Araneidae	55187	Mangora acalypha (Walckenaer, 1802)	1	LC	1		1		1		1	1		1		
Neoscona adianta (Walckenaer, 1802)	Araneidae	55189	Neoscona adianta (Walckenaer, 1802)	NT				1		VU	B2a,b, C2a, D1	1			1		LC
Nuctenea silvicultrix (C.L.Koch, 1844	Araneidae	55195	Nuctenea silvicultrix (C.L.Koch, 1844	EN		1				VU	B2a,b, C2a, D1				1		VU
Nuctenea umbratica (Clerck, 1757)	Araneidae	55198	Nuctenea umbratica (Clerck, 1757)	1		1		1		1		1	1		1		
Parazygiella montana (C.L.Koch, 1834)	Araneidae	55199	Parazygiella montana (C.L.Koch, 1834)	VU		LC		LC		1			LC		1		LC
Singa hamata (Clerck, 1757)	Araneidae	55202	Singa hamata (Clerck, 1757)	1		1		LC		1		1	1		1		
Singa lucina (Audouin, 1826)	Araneidae	55203	Singa lucina (Audouin, 1826)							1					1		
Singa nitidula C.L.Koch, 1844	Araneidae	55205	Singa nitidula C.L.Koch, 1844	1		1				1		1	1		1		
Stroemiellus stroemi (Thorell, 1870)	Araneidae	55209	Stroemiellus stroemi (Thorell, 1870)	DD		1		LC		1			1		1		
Zilla diodia (Walckenaer, 1802)	Araneidae	55211	Zilla diodia (Walckenaer, 1802)	1		1				1		1	1		1		
Zygiella atrica (C.L.Koch, 1845)	Araneidae	55213	Zygiella atrica (C.L.Koch, 1845)	DD		1				1			1		1		
Zygiella x-notata (Clerck, 1757)	Araneidae	55219	Zygiella x-notata (Clerck, 1757)					LC		1			1		1		
Acantholycosa lignaria (Clerck, 1757)	Lycosidae	61737	Acantholycosa lignaria (Clerck, 1757)	EN	LC	1		1		1					1		
Acantholycosa norvegica sudetica (L. Koch, 1875)	Lycosidae	61738	Acantholycosa norvegica sudetica (L. Koch, 1875)					DD							1		DD
Alopecosa accentuata (Latreille, 1817)	Lycosidae	61744	Alopecosa accentuata (Latreille, 1817)	1	LC	1		1		1			1		1		
Alopecosa aculeata (Clerck, 1757)	Lycosidae	61745	Alopecosa aculeata (Clerck, 1757)	1		1		1		1			1		1		
Alopecosa albofasciata (Brullé, 1832)	Lycosidae	61747	Alopecosa albofasciata (Brullé, 1832)					LC				DD			1		
Alopecosa barbipes (Sundevall, 1833)	Lycosidae	61755	Alopecosa barbipes (Sundevall, 1833)					DD				DD			1		DD
Alopecosa cuneata (Clerck, 1757)	Lycosidae	61761	Alopecosa cuneata (Clerck, 1757)	1	LC	1		LC		1		1	1		1		
Alopecosa cursor (Hahn, 1831)	Lycosidae	61762	Alopecosa cursor (Hahn, 1831)	EN				LC		NT		DD			1		LC
Alopecosa fabrilis (Clerck, 1757)	Lycosidae	61767	Alopecosa fabrilis (Clerck, 1757)	EN						VU	B2a,b, C2a, D1				1		VU
Alopecosa inquilina (Clerck, 1757)	Lycosidae	61776	Alopecosa inquilina (Clerck, 1757)	VU		1		LC		1		1			1		LC
Alopecosa mariae (Dahl, 1908)	Lycosidae	61783	Alopecosa mariae (Dahl, 1908)	CR				1		1					1		
Alopecosa pinetorum (Thorell, 1856)	Lycosidae	61790	Alopecosa pinetorum (Thorell, 1856)			1		1		NT					1		
Alopecosa psammophila Buchar, 2001	Lycosidae	61791	Alopecosa psammophila Buchar, 2001							1					1		
Alopecosa pulverulenta (Clerck, 1757)	Lycosidae	61793	Alopecosa pulverulenta (Clerck, 1757)	1	LC	1		LC		1		1	1		1		
Alopecosa reimoseri Kolosváry, 1834	Lycosidae	61794	Alopecosa reimoseri Kolosváry, 1834							1?					?		
Alopecosa schmidti (Hahn, 1835)	Lycosidae	61796	Alopecosa schmidti (Hahn, 1835)	VU						VU	B2a,b, C2a, D1				1		VU
Alopecosa solitaria (Herman, 1876)	Lycosidae	61798	Alopecosa solitaria (Herman, 1876)	VU				1		NT					1		LC
Alopecosa striatipes (C.L.Koch, 1837)	Lycosidae	61801	Alopecosa striatipes (C.L.Koch, 1837)							1					1		
Alopecosa sulzeri (Pavesi, 1873)	Lycosidae	61802	Alopecosa sulzeri (Pavesi, 1873)	1	LC			LC		1					1		
Alopecosa taeniata (C.L.Koch, 1835)	Lycosidae	61803	Alopecosa taeniata (C.L.Koch, 1835)	1		1				1					1		
Alopecosa trabalis (Clerck, 1757)	Lycosidae	61807	Alopecosa trabalis (Clerck, 1757)	1	LC	1		1		1			1		1		
Arctosa cinerea (Fabricius, 1777)	Lycosidae	61814	Arctosa cinerea (Fabricius, 1777)	VU		1		LC		1		1?			1		LC
Arctosa figurata (Simon, 1876)	Lycosidae	61816	Arctosa figurata (Simon, 1876)	DD				1		1					1		
Arctosa lamperti Dahl, 1908	Lycosidae	61810	Arctosa alpigena lamperti Dahl, 1908			1									1		
Arctosa leopardus (Sundevall, 1833)	Lycosidae	61819	Arctosa leopardus (Sundevall, 1833)	1		1		LC		1		1	1		1		
Arctosa lutetiana (Simon, 1876)	Lycosidae	61821	Arctosa lutetiana (Simon, 1876)	VU		1				1		1?			1		
Arctosa maculata (Hahn, 1822)	Lycosidae	61822	Arctosa maculata (Hahn, 1822)	NT		1		LC		1		1			1		LC
Arctosa perita (Latreille, 1799)	Lycosidae	61826	Arctosa perita (Latreille, 1799)	VU		1		LC		VU	B2a,b, C2a, D1		DD		1		NT
Arctosa stigmosa (Thorell, 1875)	Lycosidae	61831	Arctosa stigmosa (Thorell, 1875)							VU	B2a,b, C2a, D1		DD		1		NT

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Aulonia albimana (Walckenaer, 1805)	Lycosidae	61835	Aulonia albimana (Walckenaer, 1805)	1	LC	1		LC		1		1	1		1		
Geolycosa vultuosa (C.L.Koch, 1838)	Lycosidae	61840	Geolycosa vultuosa (C.L.Koch, 1838)					LC		NT		VU			1		NT
Hogna radiata (Latreille, 1817)	Lycosidae	61860	Hogna radiata (Latreille, 1817)		LC			LC		1		1			1		
Hygrolycosa rubrofasciata (Ohlert, 18	Lycosidae	61862	Hygrolycosa rubrofasciata (Ohlert, 18			1		LC		EN	B2a,b, C2a, D1		VU		1		NT
Lycosa singoriensis (Laxmann, 1770)	Lycosidae	61884	Lycosa singoriensis (Laxmann, 1770)	RE?						1		1	RE?		1		
Pardosa agrestis (Westring, 1861)	Lycosidae	61897	Pardosa agrestis (Westring, 1861)	1	LC	1		LC		1		1	1		1		
Pardosa agricola (Thorell, 1856)	Lycosidae	61900	Pardosa agricola (Thorell, 1856)	CR		1		LC		1		1	1		1		
Pardosa alacris (C.L.Koch, 1833)	Lycosidae	61901	Pardosa alacris (C.L.Koch, 1833)	1	LC	1		1		1			1		1		
Pardosa albatula (Roewer, 1951)	Lycosidae	61902	Pardosa albatula (Roewer, 1951)	1		VU	D	1		VU	B2a,b, C2a, D1				1		VU
Pardosa amentata (Clerck, 1757)	Lycosidae	61903	Pardosa amentata (Clerck, 1757)	1		1		LC		1		1	1		1		
Pardosa bifasciata (C.L.Koch, 1834)	Lycosidae	61908	Pardosa bifasciata (C.L.Koch, 1834)	DD	LC			1		1					1		
Pardosa blanda (C. L. Koch, 1833)	Lycosidae	61909	Pardosa blanda (C. L. Koch, 1833)					1							1		
Pardosa evelinae Wunderlich, 1984	Lycosidae	61920	Pardosa evelinae Wunderlich, 1984												1		
Pardosa ferruginea (L.Koch, 1870)	Lycosidae	61922	Pardosa ferruginea (L.Koch, 1870)			VU	B1, D	LC		NT		DD	DD		1		NT
Pardosa fulvipes Collet, 1875	Lycosidae	61924	Pardosa fulvipes Collet, 1875			VU	D			DD					1		NT
Pardosa hortensis (Thorell, 1872)	Lycosidae	61928	Pardosa hortensis (Thorell, 1872)	1	LC	1		LC		1		1			1		
Pardosa kratochvílli (Kolosváry, 1934a)	Lycosidae	61937	Pardosa kratochvílli (Kolosváry, 1934a)							1?					?		
Pardosa lugubris (Walckenaer, 1802)	Lycosidae	61942	Pardosa lugubris (Walckenaer, 1802)	1	LC	1		LC		1		1	1		1		
Pardosa monticola (Clerck, 1757)	Lycosidae	61949	Pardosa monticola (Clerck, 1757)	1	LC	1		LC		1		1	1		1		
Pardosa morosa (L.Koch, 1870)	Lycosidae	61950	Pardosa morosa (L.Koch, 1870)	VU		1		LC		1		1	NT		1		LC
Pardosa nebulosa (Thorell, 1872)	Lycosidae	61952	Pardosa nebulosa (Thorell, 1872)							1					1		
Pardosa nigra (C.L.Koch, 1834)	Lycosidae	61953	Pardosa nigra (C.L.Koch, 1834)			EN	D	NT		1			DD		1		NT
Pardosa nigriceps (Thorell, 1856)	Lycosidae	61954	Pardosa nigriceps (Thorell, 1856)	NT		1		1		NT					1		
Pardosa oreophila Simon, 1937	Lycosidae	61959	Pardosa oreophila Simon, 1937					1							1		
Pardosa paludicola (Clerck, 1757)	Lycosidae	61960	Pardosa paludicola (Clerck, 1757)	1	LC	1		LC		1			1		1		
Pardosa palustris (Linnaeus, 1758)	Lycosidae	61962	Pardosa palustris (Linnaeus, 1758)	1	LC	1		LC		1		1	1		1		
Pardosa poecila (Herman, 1879)	Lycosidae	61966	Pardosa poecila (Herman, 1879)							1?					?		
Pardosa prativaga (L.Koch, 1870)	Lycosidae	61969	Pardosa prativaga (L.Koch, 1870)	1	LC	1		1		1			1		1		
Pardosa proxima (C.L.Koch, 1847)	Lycosidae	61973	Pardosa proxima (C.L.Koch, 1847)					LC		NT		DD			1		LC
Pardosa pullata (Clerck, 1757)	Lycosidae	61976	Pardosa pullata (Clerck, 1757)	1	LC	1		LC		1			1		1		
Pardosa riparia (C.L.Koch, 1833)	Lycosidae	61978	Pardosa riparia (C.L.Koch, 1833)	1	LC	1		LC		1		1	1		1		
Pardosa saltuaria (L.Koch, 1870)	Lycosidae	61980	Pardosa saltuaria (L.Koch, 1870)			EN	D	1		1		1			1		LC
Pardosa sordidata (Thorell, 1875)	Lycosidae	61984	Pardosa sordidata (Thorell, 1875)			LC		LC		NT			DD		1		LC
Pardosa sphagnicola (F.Dahl, 1908)	Lycosidae	61985	Pardosa sphagnicola (F.Dahl, 1908)					LC		VU			DD		1		LC
Pardosa vittata (Keyserling, 1863)	Lycosidae	61997	Pardosa vittata (Keyserling, 1863)									DD	DD		1		DD
Pardosa wagleri (Hahn, 1822)	Lycosidae	62000	Pardosa wagleri (Hahn, 1822)	CR		1		LC		1		1	NT		1		LC
Pirata insularis Emerton 1885	Lycosidae	62005	Piratula insularis (Emerton 1885)			1									1		
Pirata piraticus (Clerck, 1757)	Lycosidae	62008	Pirata piraticus (Clerck, 1757)	1		1		LC		1		1			1		
Pirata piscatorius (Clerck, 1757)	Lycosidae	62009	Pirata piscatorius (Clerck, 1757)	DD		1				1					1		
Pirata tenuitarsis Simon, 1876	Lycosidae	62013	Pirata tenuitarsis Simon, 1876	DD						VU	B2a,b, C2a, D1				1		NT
Pirata uliginosus (Thorell, 1856)	Lycosidae	62014	Pirata uliginosus (Thorell, 1856)			1		1		NT					1		
Piratula hygrophila (Thorell, 1872)	Lycosidae	62004	Piratula hygrophila (Thorell, 1872)	1		1		1		1		1	1		1		
Piratula knorri (Scopoli, 1763)	Lycosidae	62006	Piratula knorri (Scopoli, 1763)	1		1		LC		1		1	1		1		
Piratula latitans (Blackwall, 1841)	Lycosidae	62007	Piratula latitans (Blackwall, 1841)	1		1		1		1			1		1		
Trochosa robusta (Simon, 1876)	Lycosidae	62027	Trochosa robusta (Simon, 1876)	1		1		1		1			1		1		
Trochosa ruricola (De Geer, 1778)	Lycosidae	62028	Trochosa ruricola (De Geer, 1778)	1	LC	1		LC		1		1	1		1		
Trochosa spinipalpis (F.O.P.-Cambridge, 1895)	Lycosidae	62029	Trochosa spinipalpis (F.O.P.-Cambridge, 1895)	1		1		1		1					1		
Trochosa terricola Thorell, 1856	Lycosidae	62030	Trochosa terricola Thorell, 1856	1	LC	1		1		1		1	1		1		
Xerolycosa miniata (C.L.Koch, 1834)	Lycosidae	62035	Xerolycosa miniata (C.L.Koch, 1834)	1	LC	1		LC		1		1	1		1		
Xerolycosa nemoralis (Westring, 1861)	Lycosidae	62036	Xerolycosa nemoralis (Westring, 1861)	1		1		1		1		1	1		1		
Dolomedes fimbriatus (Clerck, 1757)	Pisauridae	64295	Dolomedes fimbriatus (Clerck, 1757)	DD		1		1		1		1?	1		1		
Dolomedes plantarius (Clerck, 1757)	Pisauridae	64297	Dolomedes plantarius (Clerck, 1757)							EN	B2a,b, C2a, D1	1?	EN	B1a	1		EN
Pisaura mirabilis (Clerck, 1757)	Pisauridae	64300	Pisaura mirabilis (Clerck, 1757)	1	LC	1		LC		1		1	1		1		
Oxyopes heterophthalmus (Latreille, 1804)	Oxyopidae	63305	Oxyopes heterophthalmus (Latreille, 1804)					1		VU	B2a,b, C2a, D1				1		LC
Oxyopes lineatus Latreille, 1806	Oxyopidae	63308	Oxyopes lineatus Latreille, 1806					LC		VU	B2a,b, C2a, D1				1		NT
Oxyopes ramosus (Martini & Goeze, 1778)	Oxyopidae	63311	Oxyopes ramosus (Martini & Goeze, 1778)	DD	LC	1		1		1			DD		1		

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Zora armillata Simon, 1878	Zoridae	67758	Zora armillata Simon, 1878	EN						EN	B2a,b, C2a, D1				1		VU
Zora distincta Kulczyński, 1915	Zoridae	67759	Zora distincta Kulczyński, 1915	EN		EN	D			VU	B2a,b, C2a, D1				1	x	EN
Zora manicata Simon, 1878	Zoridae	67761	Zora manicata Simon, 1878	NT						NT					1		NT
Zora nemoralis (Blackwall, 1861)	Zoridae	67762	Zora nemoralis (Blackwall, 1861)	1		1		LC		1		1	1		1		
Zora parallela Simon, 1878	Zoridae	67764	Zora parallela Simon, 1878	EN						VU	B2a,b, C2a, D1				1		VU
Zora pardalis Simon, 1878	Zoridae	67765	Zora pardalis Simon, 1878	DD	NT			DD		1					1		LC
Zora silvestris Kulczyński, 1897	Zoridae	67767	Zora silvestris Kulczyński, 1897	1		1				1					1		
Zora spinimana (Sundevall, 1833)	Zoridae	67768	Zora spinimana (Sundevall, 1833)	1	LC	1		LC		1			1		1		
Agelena labyrinthica (Clerck, 1757)	Agelenidae	54569	Agelena labyrinthica (Clerck, 1757)	1	LC	1		LC		1		1	1		1		
Allagelena gracilens (C.L.Koch, 1841)	Agelenidae	54568	Allagelena gracilens (C.L.Koch, 1841)	1	LC	1		LC		1			1		1		
Histopona luxurians (Kulczyński, 1897)	Agelenidae	54590	Histopona luxurians (Kulczyński, 1897)							1?					?		
Histopona torpida (C.L.Koch, 1837)	Agelenidae	54596	Histopona torpida (C.L.Koch, 1837)	1	LC	1		LC		1			1		1		
Malthonica campestris (C.L.Koch, 1834)	Agelenidae	54611	Tegenaria campestris (C.L.Koch, 1834)	1	LC	1		LC		1		1			1		
Malthonica ferruginea (Panzer, 1804)	Agelenidae	54615	Tegenaria ferruginea (Panzer, 1804)	1		1		LC		1		1	1		1		
Malthonica pagana (C.L. Koch, 1840)	Agelenidae	54622	Tegenaria pagana C.L. Koch, 1840									1	1		1		
Malthonica picta Simon, 1870	Agelenidae	54625	Eratigena picta (Simon, 1870)					LC		1?					1		
Malthonica silvestris (L.Koch, 1872)	Agelenidae	54632	Tegenaria silvestris L.Koch, 1872	1	LC	1		LC		1		1	1		1		
Tegenaria agrestis (Walckenaer, 1802)	Agelenidae	54644	Eratigena agrestis (Walckenaer, 1802)	1	LC	1				1			1		1		
Tegenaria atrica C.L.Koch, 1843	Agelenidae	54644	Eratigena atrica (C.L.Koch, 1843)	1		1		LC		1			1		1		
Tegenaria domestica (Clerck, 1757)	Agelenidae	54659	Tegenaria domestica (Clerck, 1757)	1		1		LC		1		1	1		1		
Tegenaria parietina (Fourcroy, 1785)	Agelenidae	54686	Tegenaria parietina (Fourcroy, 1785)					LC		1?			1		1		
Tegenaria tridentina L.Koch, 1872	Agelenidae	54700	Tegenaria tridentina L.Koch, 1872							1?					?		
Textrix denticulata (Olivier, 1789)	Agelenidae	54706	Textrix denticulata (Olivier, 1789)	1		LC		LC		1					1		
Argyroneta aquatica (Clerck, 1757)	Cybaeidae	56437	Argyroneta aquatica (Clerck, 1757)	VU						EN	B2a,b, C2a, D1	DD			1		VU
Cybaeus angustiarum L.Koch, 1868	Cybaeidae	56440	Cybaeus angustiarum L.Koch, 1868	1	LC	1		1		1		1	1		1		
Cybaeus tetricus (C. L. Koch, 1839)	Cybaeidae	56447	Cybaeus tetricus (C. L. Koch, 1839)					DD							1		
Antistea elegans (Blackwall, 1841)	Hahniidae	59172	Antistea elegans (Blackwall, 1841)	1		1		LC		1			1		1		
Cryphoeca carpathica Herman, 1879	Hahniidae	59174	Cryphoeca carpathica Herman, 1879			LC		DD		NT			DD		1	x	DD
Cryphoeca silvicola (C.L.Koch, 1834)	Hahniidae	59181	Cryphoeca silvicola (C.L.Koch, 1834)	1		1		LC		1			1		1		
Hahnia candida Simon, 1875	Hahniidae	59185	Hahnia candida Simon, 1875					DD							?		
Hahnia difficilis Harm, 1966	Hahniidae	59186	Hahnia difficilis Harm, 1966			EN	D			VU	B2a,b, C2a, D1				1		VU
Hahnia helveola Simon, 1875	Hahniidae	59188	Hahnia helveola Simon, 1875	EN		1				1					1		
Hahnia montana (Blackwall, 1841)	Hahniidae	59194	Hahnia montana (Blackwall, 1841)			EN	D			VU	B2a,b, C2a, D1		VU		1		VU
Hahnia nava (Blackwall, 1841)	Hahniidae	59195	Hahnia nava (Blackwall, 1841)	1	LC	VU		LC		1		1	1		1		
Hahnia ononidum Simon, 1875	Hahniidae	59196	Hahnia ononidum Simon, 1875	1						1			1		1		
Hahnia picta Kulczyński, 1897	Hahniidae	59198	Hahnia picta Kulczyński, 1897	1				LC		EN	B2a,b, C2a, D1				1		NT
Hahnia pusilla C.L.Koch, 1841	Hahniidae	59199	Hahnia pusilla C.L.Koch, 1841	EN		1		LC		1			1		1		LC
Altella biuncata (Miller, 1949)	Dictynidae	56566	Altella biuncata (Miller, 1949)	CR		CR	D			VU	B2a,b, C2a, D1				1		EN
Altella lucida (Simon, 1874)	Dictynidae	56568	Altella lucida (Simon, 1874)							VU	B2a,b, C2a, D1		1		1		VU
Archaeodictyna ammophila (Menge, 1871)	Dictynidae	56572	Archaeodictyna ammophila (Menge, 1871)					LC							1		LC
Archaeodictyna consecuta (O.P.-Cambridge, 1872)	Dictynidae	56573	Archaeodictyna consecuta (O.P.-Cambridge, 1872)							DD					1		DD
Archaeodictyna minutissima (Miller, 1954)	Dictynidae	56574	Archaeodictyna minutissima (Miller, 1954)	EN						DD					1		DD
Argenna patula (Simon, 1874)	Dictynidae	56576	Argenna patula (Simon, 1874)							EN	B2a,b, C2a, D1				1		EN
Argenna subnigra (O.P.-Cambridge, 1861)	Dictynidae	56577	Argenna subnigra (O.P.-Cambridge, 1861)	1		1		1		1		1			1		
Brommella falcigera (Balogh, 1935)	Dictynidae	56578	Brommella falcigera (Balogh, 1935)			VU	D2			VU		EN			1		VU
Cicurina cicur (Fabricius, 1793)	Dictynidae	56582	Cicurina cicur (Fabricius, 1793)	1	LC	1		LC		1		1	1		1		
Dictyna arundinacea (Linnaeus, 1758)	Dictynidae	56590	Dictyna arundinacea (Linnaeus, 1758)	1	LC	1		1		1			1		1		
Dictyna civica (Lucas, 1850)	Dictynidae	56591	Dictyna civica (Lucas, 1850)	1				1		1					1		
Dictyna latens (Fabricius, 1775)	Dictynidae	56599	Dictyna latens (Fabricius, 1775)							1					1		
Dictyna major Menge, 1869	Dictynidae	56600	Dictyna major Menge, 1869							CR	B2a,b, C2a, D1				1		VU
Dictyna pusilla Thorell, 1856	Dictynidae	56602	Dictyna pusilla Thorell, 1856	1		1		1		1			1		1		
Dictyna uncinata Thorell, 1856	Dictynidae	56606	Dictyna uncinata Thorell, 1856	1		1		LC		1			1		1		
Dictyna vicina Simon, 1873	Dictynidae	56608	Dictyna vicina Simon, 1873							DD					1		DD
Emblyna annulipes (Blackwall, 1846)	Dictynidae	56610	Emblyna annulipes (Blackwall, 1846)	?						NT					1		NT
Emblyna brevidens (Kulczyński, 1897)	Dictynidae	56611	Emblyna brevidens (Kulczyński, 1897)	EN						VU	B2a,b, C2a, D1				1		VU
Lathys humilis (Blackwall, 1855)	Dictynidae	56620	Lathys humilis (Blackwall, 1855)	NT		1		1		1			1		1		

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Lathys stigmatisata (Menge, 1869)	Dictynidae	56628	Lathys stigmatisata (Menge, 1869)	VU											1		NT
Marilynia bicolor (Simon, 1870)	Dictynidae	56631	Marilynia bicolor (Simon, 1870)					1							1		
Mastigusa arietina (Thorell, 1871)	Dictynidae	56632	Mastigusa arietina (Thorell, 1871)			1		LC		LC					1		
Mastigusa macrophthalma (Kulczynski, 1897)	Dictynidae	56634	Mastigusa macrophthalma (Kulczynski, 1897)					v		EN	B2a,b, C2a, D1	EN			1		NT
Nigma flavescens (Walckenaer, 1830)	Dictynidae	56636	Nigma flavescens (Walckenaer, 1830)	1		1		LC		1			1		1		
Nigma walckenaeri (Roewer, 1951)	Dictynidae	56641	Nigma walckenaeri (Roewer, 1951)	1		1		1?		1			1		1		
Amaurobius erberi (Keyserling, 1863)	Amaurobiidae	54790	Amaurobius erberi (Keyserling, 1863)	CR				LC		1					1		LC
Amaurobius fenestralis (Stroem, 1768)	Amaurobiidae	54791	Amaurobius fenestralis (Stroem, 1768)	1	LC	1		1		1			1		1		
Amaurobius ferox (Walckenaer, 1830)	Amaurobiidae	54792	Amaurobius ferox (Walckenaer, 1830)	1				LC		1		1	1		1		
Amaurobius jugorum L.Koch, 1868	Amaurobiidae	54796	Amaurobius jugorum L.Koch, 1868	1						1					1		
Amaurobius obustus L. Koch, 1868	Amaurobiidae	54801	Amaurobius obustus L. Koch, 1868					1?							?		
Amaurobius pallidus L.Koch, 1868	Amaurobiidae	54805	Amaurobius pallidus L.Koch, 1868					DD		DD		DD			1		DD
Callobius claustrarius (Hahn, 1833)	Amaurobiidae	54818	Callobius claustrarius (Hahn, 1833)	1		1		1		1			1		1		
Coelotes atropos (Walckenaer, 1830)	Amaurobiidae	54822	Coelotes atropos (Walckenaer, 1830)	1	LC	1		LC		1		1	1		1		
Coelotes mediocris Kulczyński, 1887	Amaurobiidae	54826	Coelotes mediocris Kulczyński, 1887							1?					?		
Coelotes pickardi carpathensis Ovtchinnikov, 1999 syn Coelotes pastor carpathensis Ovtchinnikov, 1999	Amaurobiidae	54829	Coelotes pickardi carpathensis Ovtchinnikov, 1999 syn Coelotes pastor carpathensis Ovtchinnikov, 1999										NT		1		NT
Coelotes terrestris (Wider, 1834)	Amaurobiidae	54840	Coelotes terrestris (Wider, 1834)	1		1		1		1			1		1		
Eurocoelotes falciger (Kulczynski, 1897)	Amaurobiidae	54848	Eurocoelotes falciger (Kulczynski, 1897)					DD				1?			1		DD
Inermocoelotes inermis (L.Koch, 1855)	Amaurobiidae	54850	Inermocoelotes inermis (L.Koch, 1855)	1	LC	1		LC		1		1	1		1		
Urocoras longispinus (Kulczyński, 1897)	Amaurobiidae	54858	Urocoras longispinus (Kulczyński, 1897)		LC			1		1		1			1		
Titanoeca psammophila Wunderlich, 1993	Titanoecidae	66702	Titanoeca psammophila Wunderlich, 1993	1						VU	B2a,b, C2a, D1				1		NT
Titanoeca quadriguttata (Hahn, 1833)	Titanoecidae	66703	Titanoeca quadriguttata (Hahn, 1833)	1	LC	LC		LC		1			DD		1		LC
Titanoeca schineri L.Koch, 1872	Titanoecidae	66704	Titanoeca schineri L.Koch, 1872	1						1			DD		1		
Titanoeca tristis L.Koch, 1872	Titanoecidae	66705	Titanoeca tristis L.Koch, 1872	RE?								EN			1		EN
Titanoeca veteranica Herman, 1879	Titanoecidae	66707	Titanoeca veteranica Herman, 1879					NT		NT		1			1		NT
Cheiracanthium campestre Lohmander, 1944	Miturgidae	62362	Cheiracanthium campestre Lohmander, 1944	EN		1		1		EN	B2a,b, C2a, D1				1		VU
Cheiracanthium cuniculum Herman, 1879	Miturgidae	62365	Cheiracanthium cuniculum Herman, 1879							1					1		
Cheiracanthium effossum Herman, 1879	Miturgidae	62366	Cheiracanthium effossum Herman, 1879	EN						NT					1		NT
Cheiracanthium elegans Thorell, 1875	Miturgidae	62367	Cheiracanthium elegans Thorell, 1875	EN				LC		1					1		LC
Cheiracanthium erraticum (Walckenaer, 1802)	Miturgidae	62368	Cheiracanthium erraticum (Walckenaer, 1802)	1		1				1			1		1		
Cheiracanthium mildei L.Koch, 1864	Miturgidae	62377	Cheiracanthium mildei L.Koch, 1864	1				LC		1		1	1		1		
Cheiracanthium montanum L.Koch, 1878	Miturgidae	62378	Cheiracanthium montanum L.Koch, 1878	EN		1				NT					1		NT
Cheiracanthium oncognathum Thorell, 1871	Miturgidae	62380	Cheiracanthium oncognathum Thorell, 1871			1				VU	B2a,b, C2a, D1				1		NT
Cheiracanthium pelasgicum (C. L. Koch, 1837)	Miturgidae	62381	Cheiracanthium pelasgicum (C. L. Koch, 1837)					1							1		
Cheiracanthium pennyi O.P.-Cambridge, 1873	Miturgidae	62383	Cheiracanthium pennyi O.P.-Cambridge, 1873	EN						1					1		
Cheiracanthium punctorium (Villers, 1789)	Miturgidae	62384	Cheiracanthium punctorium (Villers, 1789)	EN	LC					LC					1		LC
Cheiracanthium rupestre Herman, 1879	Miturgidae	62385	Cheiracanthium rupestre Herman, 1879					VU	D2	EN	B2a,b, C2a, D1				1		VU
Cheiracanthium seidlitzii L.Koch, 1864	Miturgidae	62387	Cheiracanthium seidlitzii L.Koch, 1864							1					1		
Cheiracanthium virescens (Sundevall, 1833)	Miturgidae	62389	Cheiracanthium virescens (Sundevall, 1833)	NT		1				1					1		
Anyphaena accentuata (Walckenaer, 1802)	Anyphaenidae	55043	Anyphaena accentuata (Walckenaer, 1802)		LC	1		LC		1		1	1		1		
Anyphaena furva Miller, 1967	Anyphaenidae	55045	Anyphaena furva Miller, 1967							EN	B2a,b, C2a, D1				1		EN
Agroeca brunnea (Blackwall, 1833)	Liocranidae	61653	Agroeca brunnea (Blackwall, 1833)	1		1		1		1			1		1		
Agroeca cuprea Menge, 1873	Liocranidae	61654	Agroeca cuprea Menge, 1873	1	LC	1		LC		1		1			1		
Agroeca lusatica (L.Koch, 1875)	Liocranidae	61658	Agroeca lusatica (L.Koch, 1875)	VU		1		1		EN	B2a,b, C2a, D1				1		NT
Agroeca proxima (O.P.-Cambridge, 1871)	Liocranidae	61661	Agroeca proxima (O.P.-Cambridge, 1871)	EN		1				EN	B2a,b, C2a, D1				1		NT
Apostenus fuscus Westring, 1851	Liocranidae	61663	Apostenus fuscus Westring, 1851	1		1		LC		1			1		1		
Liocranoeca striata (Kulczyński, 1882)	Liocranidae	61679	Liocranoeca striata (Kulczyński, 1882)	1		1		DD		NT					1		DD
Liocranum rupicola (Walckenaer, 1830)	Liocranidae	61687	Liocranum rupicola (Walckenaer, 1830)	1	LC	1		LC		1		1			1		
Mesiotelus annulipes (Kulczyński, 1897)	Liocranidae	61691	Mesiotelus annulipes (Kulczyński, 1897)							1					1		
Sagana rutilans Thorell, 1875	Liocranidae	61700	Sagana rutilans Thorell, 1875					1		NT		DD			1		LC
Scotina celans (Blackwall, 1841)	Liocranidae	61701	Scotina celans (Blackwall, 1841)	NT		1				1					1		
Scotina palliardi (L.Koch, 1881)	Liocranidae	61704	Scotina palliardi (L.Koch, 1881)	EN		1				NT					1		NT
Clubiona alpicola Kulczyński, 1882	Clubionidae	56292	Clubiona alpicola Kulczyński, 1882			LC		1		1			NT		1		LC
Clubiona brevipes Blackwall, 1841	Clubionidae	56296	Clubiona brevipes Blackwall, 1841	1				LC		NT					1		LC
Clubiona caerulescens L.Koch, 1867	Clubionidae	56297	Clubiona caerulescens L.Koch, 1867	1		1		1		1			1		1		

Name of species (Fauna Europea)	Family	ID	Name of species (Platnick 2014, version14.5)	CZ RL	HU RL	PL RL	Crit	RO RL	Crit	SK RL	Crit	RS RL	UA RL	Crit	Status	Endemic	Carp RL
Clubiona comta C.L.Koch, 1839	Clubionidae	56299	Clubiona comta C.L.Koch, 1839	1	LC	1		LC		1			1		1		
Clubiona corticalis (Walckenaer, 1802)	Clubionidae	56303	Clubiona corticalis (Walckenaer, 1802)			1		LC		NT					1		
Clubiona diversa O.P.-Cambridge, 1862	Clubionidae	56307	Clubiona diversa O.P.-Cambridge, 1862	1	LC	1		1		1					1		
Clubiona frisia Wunderlich & Schuett, 1995	Clubionidae	56309	Clubiona frisia Wunderlich & Schuett, 1995							DD					1		
Clubiona frutetorum L.Koch, 1866	Clubionidae	56310	Clubiona frutetorum L.Koch, 1866	NT		1		LC		1			1		1		LC
Clubiona genevensis L.Koch, 1866	Clubionidae	56311	Clubiona genevensis L.Koch, 1866	NT		1		LC		1					1		LC
Clubiona germanica Thorell, 1871	Clubionidae	56312	Clubiona germanica Thorell, 1871	1		1				1			1		1		
Clubiona juvenis Simon, 1878	Clubionidae	56316	Clubiona juvenis Simon, 1878	EN		LC		1		DD					1		LC
Clubiona kulczynskii Lessert, 1905	Clubionidae	56317	Clubiona kulczynskii Lessert, 1905	DD						DD					1		DD
Clubiona leucaspis Simon, 1932	Clubionidae	56318	Clubiona leucaspis Simon, 1932							DD					1		
Clubiona lutescens Westring, 1851	Clubionidae	56319	Clubiona lutescens Westring, 1851	1		1		1		1		1	1		1		
Clubiona marmorata L.Koch, 1866	Clubionidae	56320	Clubiona marmorata L.Koch, 1866	1		1				1			1		1		
Clubiona neglecta O.P.-Cambridge, 1862	Clubionidae	56324	Clubiona neglecta O.P.-Cambridge, 1862	1		1		LC		1					1		
Clubiona norvegica Strand, 1900	Clubionidae	56325	Clubiona norvegica Strand, 1900										1		1		
Clubiona pallidula (Clerck, 1757)	Clubionidae	56327	Clubiona pallidula (Clerck, 1757)	1		1		LC		1			1		1		
Clubiona phragmitis C.L.Koch, 1843	Clubionidae	56328	Clubiona phragmitis C.L.Koch, 1843	1		1		1		1					1		
Clubiona pseudoneglecta Wunderlich, 1994	Clubionidae	56331	Clubiona pseudoneglecta Wunderlich, 1994	CR	LC										1		NT
Clubiona reclusa O.P.-Cambridge, 1863	Clubionidae	56334	Clubiona reclusa O.P.-Cambridge, 1863	1		1		1		1			1		1		
Clubiona rosserae Locket, 1953	Clubionidae	56337	Clubiona rosserae Locket, 1953							CR	B2a,b, C2a, D1				1		EN
Clubiona saxatilis L.Koch, 1866	Clubionidae	56342	Clubiona saxatilis L.Koch, 1866	VU						1					1		NT
Clubiona similis L. Koch, 1867	Clubionidae	56343	Clubiona similis L. Koch, 1867	VU		1		LC		1			1		1		LC
Clubiona stagnatilis Kulczyński, 1897	Clubionidae	56344	Clubiona stagnatilis Kulczyński, 1897	1		1		1		1					1		
Clubiona subsultans Thorell, 1875	Clubionidae	56345	Clubiona subsultans Thorell, 1875	1		1		LC		1			1		1		
Clubiona subtilis L.Koch, 1867	Clubionidae	56346	Clubiona subtilis L.Koch, 1867	1		1				NT					1		
Clubiona terrestris Westring, 1851	Clubionidae	56347	Clubiona terrestris Westring, 1851	1	LC	1		LC		1		1	1		1		
Clubiona trivialis C.L.Koch, 1843	Clubionidae	56348	Clubiona trivialis C.L.Koch, 1843	1		1		1		1			1		1		
Cetonana laticeps (Canestrini, 1868)	Corinnidae	56354	Cetonana laticeps (Canestrini, 1868)					LC		1					1		
Phrurolithus festivus (C.L.Koch, 1835)	Corinnidae	56360	Phrurolithus festivus (C.L.Koch, 1835)	1	LC	1		LC		1		1	1		1		
Phrurolithus minimus C.L.Koch, 1839	Corinnidae	56362	Phrurolithus minimus C.L.Koch, 1839	NT	LC			1		1			1		1		
Phrurolithus nigrinus (Simon, 1878)	Corinnidae	56363	Phrurolithus nigrinus (Simon, 1878)					1							1		LC
Phrurolithus pullatus Kulczyński, 1897	Corinnidae	56364	Phrurolithus pullatus Kulczyński, 1897	1	LC			1		1					1		
Phrurolithus szilyi Herman, 1879	Corinnidae	56367	Phrurolithus szilyi Herman, 1879	CR	LC			LC		1					1		LC
Zodarion aculeatum Chyzer, 1897	Zodariidae	67676	Zodarion aculeatum Chyzer, 1897					NT							1		NT
Zodarion germanicum (C.L.Koch, 1837)	Zodariidae	67703	Zodarion germanicum (C.L.Koch, 1837)	1	LC	1		1		1					1		
Zodarion rubidum Simon, 1914	Zodariidae	67741	Zodarion rubidum Simon, 1914	1						1					1		
Aphantaulax cincta (L.Koch, 1866)	Gnaphosidae	58684	Aphantaulax cincta (L.Koch, 1866)					DD		EN	B2a,b, C2a, D1				1		EN
Aphantaulax trifasciata (O. P.-Cambridge, 1872)	Gnaphosidae	58686	Aphantaulax trifasciata (O. P.-Cambridge, 1872)					DD		CR	B2a,b, C2a, D1				1		EN
Berlandina cinerea (Menge, 1872)	Gnaphosidae	58692	Berlandina cinerea (Menge, 1872)	VU				NT		VU	B2a,b, C2a, D1				1		NT
Callilepis nocturna (Linnaeus, 1758)	Gnaphosidae	58701	Callilepis nocturna (Linnaeus, 1758)	1		1				1		1			1		
Callilepis schuszteri (Herman, 1879)	Gnaphosidae	58702	Callilepis schuszteri (Herman, 1879)	1	LC					1					1		
Cryptodrassus hungaricus (Balogh, 1935)	Gnaphosidae	58707	Cryptodrassus hungaricus (Balogh, 1935)	CR						VU	B2a,b, C2a, D1				1		EN
Drassodes cupreus (Blackwall, 1834)	Gnaphosidae	58718	Drassodes cupreus (Blackwall, 1834)	1				1		1					1		
Drassodes lapidosus (Walckenaer, 1802)	Gnaphosidae	58725	Drassodes lapidosus (Walckenaer, 1802)	1	LC	1		LC		1		1	1		1		
Drassodes pubescens (Thorell, 1856)	Gnaphosidae	58744	Drassodes pubescens (Thorell, 1856)	1	LC	1		1		1			1		1		
Drassodes villosus (Thorell, 1856)	Gnaphosidae	58759	Drassodes villosus (Thorell, 1856)							DD			1		1		
Drassodex hypocrita (Simon, 1878)	Gnaphosidae	58766	Drassodex hypocrita (Simon, 1878)					1							1		
Drassyllus lutetianus (L.Koch, 1866)	Gnaphosidae	58769	Drassyllus lutetianus (L.Koch, 1866)	1		1		1		1			1		1		
Drassyllus praeficus (L.Koch, 1866)	Gnaphosidae	58770	Drassyllus praeficus (L.Koch, 1866)	1	LC	1		1		1					1		
Drassyllus pumilus (C.L.Koch, 1839)	Gnaphosidae	58772	Drassyllus pumilus (C.L.Koch, 1839)	NT	LC			LC		1		1			1		
Drassyllus pusillus (C.L.Koch, 1833)	Gnaphosidae	58773	Drassyllus pusillus (C.L.Koch, 1833)	1	LC	1		1		1		1	1		1		
Drassyllus villicus (Thorell, 1875)	Gnaphosidae	58775	Drassyllus villicus (Thorell, 1875)	1	LC			1		1		1			1		
Drassyllus vinealis (Kulczyński, 1897)	Gnaphosidae	58776	Drassyllus vinealis (Kulczyński, 1897)	EN						EN	B2a,b, C2a, D1				1		EN
Echemus angustifrons (Westring, 1861)	Gnaphosidae	58778	Echemus angustifrons (Westring, 1861)							EN	B2a,b, C2a, D1	EN			1		EN
Gnaphosa alpica Simon, 1878	Gnaphosidae	58782	Gnaphosa alpica Simon, 1878		NT										syn.		
Gnaphosa bicolor (Hahn, 1833)	Gnaphosidae	58788	Gnaphosa bicolor (Hahn, 1833)		LC			1		1					1		
Gnaphosa fallax Herman, 1879	Gnaphosidae	58795	Gnaphosa fallax Herman, 1879					1?		RE?					?		

Name of species (Fauna Europea)	Family	ID	Name of species (Platnick 2014, version14.5)	CZ RL	HU RL	PL RL	Crit	RO RL	Crit	SK RL	Crit	RS RL	UA RL	Crit	Status	Endemic	Carp RL
Gnaphosa leporina (L. Koch, 1866)	Gnaphosidae	58803	Gnaphosa leporina (L. Koch, 1866)					1							1		
Gnaphosa lucifuga (Walckenaer, 1802)	Gnaphosidae	58806	Gnaphosa lucifuga (Walckenaer, 1802)	1	LC			LC		1					1		
Gnaphosa lugubris (C.L.Koch, 1839)	Gnaphosidae	58808	Gnaphosa lugubris (C.L.Koch, 1839)	1	LC					1		1			1		
Gnaphosa microps Holm, 1939	Gnaphosidae	58809	Gnaphosa microps Holm, 1939			VU	B1a			EN					1		VU
Gnaphosa modestior Kulczyński, 1897 - G. alpica Simon, 1878	Gnaphosidae	58810	Gnaphosa modestior Kulczyński, 1897 - G. alpica Simon, 1878		LC			DD		DD		DD			1		DD
Gnaphosa moesta Thorell, 1875	Gnaphosidae	58811	Gnaphosa moesta Thorell, 1875					LC							1		LC
Gnaphosa montana (L.Koch, 1866)	Gnaphosidae	58813	Gnaphosa montana (L.Koch, 1866)	VU		EN	D			NT					1		VU
Gnaphosa muscorum (L.Koch, 1866)	Gnaphosidae	58815	Gnaphosa muscorum (L.Koch, 1866)			EN	D			1					1		NT
Gnaphosa nigerrima L.Koch, 1877	Gnaphosidae	58817	Gnaphosa nigerrima L.Koch, 1877			1		1		1					1		
Gnaphosa opaca Herman, 1879	Gnaphosidae	58822	Gnaphosa opaca Herman, 1879	NT	LC	LC				1					1		
Gnaphosa petrobia L. Koch, 1872	Gnaphosidae	58825	Gnaphosa petrobia L. Koch, 1872										DD		1		DD
Haplodrassus cognatus (Westring, 1861)	Gnaphosidae	58847	Haplodrassus cognatus (Westring, 1861)	VU		1				VU					1		NT
Haplodrassus dalmatensis (L.Koch, 1866)	Gnaphosidae	58851	Haplodrassus dalmatensis (L.Koch, 1866)	NT						1					1		
Haplodrassus kulczynskii Lohmander, 1942	Gnaphosidae	58855	Haplodrassus kulczynskii Lohmander, 1942	1				1		1					1		
Haplodrassus minor (O.P.-Cambridge, 1879)	Gnaphosidae	58858	Haplodrassus minor (O.P.-Cambridge, 1879)	DD						1					1		
Haplodrassus moderatus (Kulczyński, 1897)	Gnaphosidae	58859	Haplodrassus moderatus (Kulczyński, 1897)		LC			1							1		
Haplodrassus severus (C.L.Koch, 1839)	Gnaphosidae	58861	Haplodrassus severus (C.L.Koch, 1839)							1?					?		
Haplodrassus signifer (C.L.Koch, 1839)	Gnaphosidae	58862	Haplodrassus signifer (C.L.Koch, 1839)	1	LC	1		LC		1		1	1		1		
Haplodrassus silvestris (Blackwall, 1833)	Gnaphosidae	58863	Haplodrassus silvestris (Blackwall, 1833)	1	LC	1		1		1			1		1		
Haplodrassus soerenseni (Strand, 1900)	Gnaphosidae	58864	Haplodrassus soerenseni (Strand, 1900)							EN	B2a,b, C2a, D1				1		VU
Haplodrassus umbratilis (L.Koch, 1866)	Gnaphosidae	58866	Haplodrassus umbratilis (L.Koch, 1866)	1		1				1		1?			1		
Kishidaia conspicua (L.Koch, 1866)	Gnaphosidae	58868	Kishidaia conspicua (L.Koch, 1866)	VU		1				1					1		
Micaria albovittata (Lucas, 1846)	Gnaphosidae	58880	Micaria albovittata (Lucas, 1846)					1		VU	B2a,b, C2a, D1				1		NT
Micaria coarctata (Lucas, 1846)	Gnaphosidae	58886	Micaria coarctata (Lucas, 1846)					LC		EN	B2a,b, C2a, D1				1		NT
Micaria dives (Lucas, 1846)	Gnaphosidae	58889	Micaria dives (Lucas, 1846)	CR	LC			1		1					1		
Micaria formicaria (Sundevall, 1832)	Gnaphosidae	58892	Micaria formicaria (Sundevall, 1832)	EN	NT	1				1					1		LC
Micaria fulgens (Walckenaer, 1802)	Gnaphosidae	58893	Micaria fulgens (Walckenaer, 1802)	NT	LC	1		LC		1					1		
Micaria guttulata (C.L.Koch, 1839)	Gnaphosidae	58898	Micaria guttulata (C.L.Koch, 1839)	1						VU	B2a,b, C2a, D1				1		VU
Micaria lenzi Bösenberg, 1899	Gnaphosidae	58901	Micaria lenzi Bösenberg, 1899	EN						DD					1		VU
Micaria nivosa L.Koch, 1866	Gnaphosidae	58902	Micaria nivosa L.Koch, 1866	CR		1				LC					1		LC
Micaria pulicaria (Sundevall, 1831)	Gnaphosidae	58905	Micaria pulicaria (Sundevall, 1831)	EN		1		1		1			1		1		
Micaria rossica Thorell, 1875	Gnaphosidae	58906	Micaria rossica Thorell, 1875							CR					1		CR
Micaria silesiaca L.Koch, 1875	Gnaphosidae	58908	Micaria silesiaca L.Koch, 1875			1				1		DD			1		
Micaria sociabilis Kulczyński, 1897	Gnaphosidae	58911	Micaria sociabilis Kulczyński, 1897	1						EN	B2a,b, C2a, D1				1		VU
Micaria subopaca Westring, 1861	Gnaphosidae	58912	Micaria subopaca Westring, 1861	VU		1				VU	B2a,b, C2a, D1				1		NT
Nomisia aussereri (L. Koch, 1872)	Gnaphosidae	58916	Nomisia aussereri (L. Koch, 1872)					LC				DD			1		LC
Nomisia exornata (C.L.Koch, 1839)	Gnaphosidae	58919	Nomisia exornata (C.L.Koch, 1839)					LC		VU	B2a,b, C2a, D1	DD			1		NT
Parasyrisca vinosa (Simon, 1878)	Gnaphosidae	58930	Parasyrisca vinosa (Simon, 1878)												1		
Phaeocedus braccatus (L.Koch, 1866)	Gnaphosidae	58932	Phaeocedus braccatus (L.Koch, 1866)	EN						1					1		NT
Poecilochroa variana (C.L.Koch, 1839)	Gnaphosidae	58944	Poecilochroa variana (C.L.Koch, 1839)							NT		DD?			1		NT
Scotophaeus blackwalli (Thorell, 1871)	Gnaphosidae	58970	Scotophaeus blackwalli (Thorell, 1871)							VU	B2a,b, C2a, D1				1		NT
Scotophaeus quadripunctatus (Linnaeus, 1758)	Gnaphosidae	58981	Scotophaeus quadripunctatus (Linnaeus, 1758)	1		1				1			1		1		
Scotophaeus scutulatus (L.Koch, 1866)	Gnaphosidae	58983	Scotophaeus scutulatus (L.Koch, 1866)	1				LC		1			1		1		
Sosticus loricatus (L.Koch, 1866)	Gnaphosidae	58996	Sosticus loricatus (L.Koch, 1866)	RE?		1				VU	B2a,b, C2a, D1				1		NT
Trachyzelotes barbatus (L. Koch, 1866)	Gnaphosidae	59003	Trachyzelotes barbatus (L. Koch, 1866)					LC							1		LC
Trachyzelotes pedestris (C.L.Koch, 1837)	Gnaphosidae	59013	Trachyzelotes pedestris (C.L.Koch, 1837)	1	LC	LC	D	1		1					1		
Zelotes aeneus (Simon, 1878)	Gnaphosidae	59021	Zelotes aeneus (Simon, 1878)	VU		1		1		VU	B2a,b, C2a, D1				1		NT
Zelotes apricorum (L.Koch, 1876)	Gnaphosidae	59024	Zelotes apricorum (L.Koch, 1876)	1	LC	1		LC		1		1	1		1		
Zelotes atrocaeruleus (Simon, 1878)	Gnaphosidae	59027	Zelotes atrocaeruleus (Simon, 1878)	CR				1		CR	B2a,b, C2a, D1				1		VU
Zelotes aurantiacus Miller, 1967	Gnaphosidae	59028	Zelotes aurantiacus Miller, 1967	NT				1		1					1		
Zelotes caucasius (L.Koch, 1866)	Gnaphosidae	59035	Civizelotes caucasius (L.Koch, 1866)		LC			LC		NT					1		LC
Zelotes clivicola (L.Koch, 1870)	Gnaphosidae	59038	Zelotes clivicola (L.Koch, 1870)	NT		1		1		1			1		1		
Zelotes electus (C.L.Koch, 1839)	Gnaphosidae	59051	Zelotes electus (C.L.Koch, 1839)	1	LC	1		1		1		1			1		
Zelotes erebeus (Thorell, 1871)	Gnaphosidae	59052	Zelotes erebeus (Thorell, 1871)	DD	LC					1					1		
Zelotes exiguus (Müller & Schenkel, 1895)	Gnaphosidae	59053	Zelotes exiguus (Müller & Schenkel, 1895)							VU	B2a,b, C2a, D1				1		VU

Name of species (Fauna Europea)	Family	ID	Name of species (Platnick 2014, version14.5)	CZ RL	HU RL	PL RL	Crit	RO RL	Crit	SK RL	Crit	RS RL	UA RL	Crit	Status	Endemic	Carp RL
Zelotes gracilis (Canestrini, 1868)	Gnaphosidae	59064	Civizelotes gracilis (Canestrini, 1868)	NT				1		1					1		
Zelotes hermani (Chyzer, 1897)	Gnaphosidae	59066	Zelotes hermani (Chyzer, 1897)					DD		1		1			1		DD
Zelotes latreillei (Simon, 1878)	Gnaphosidae	59075	Zelotes latreillei (Simon, 1878)	1	LC	1		1		1			1		1		
Zelotes longipes (L.Koch, 1866)	Gnaphosidae	59077	Zelotes longipes (L.Koch, 1866)	1		1		LC		1		1			1		
Zelotes mundus (Kulczyński, 1897)	Gnaphosidae	59086	Zelotes mundus (Kulczyński, 1897)		LC										1		DD
Zelotes oblongus (C.L. Koch, 1833)	Gnaphosidae	59091	Zelotes oblongus (C.L. Koch, 1833)					DD				CR?			1		
Zelotes petrensis (C.L.Koch, 1839)	Gnaphosidae	59098	Zelotes petrensis (C.L.Koch, 1839)	1	LC	1		1		1		1			1		
Zelotes puritanus Chamberlin, 1922	Gnaphosidae	59104	Zelotes puritanus Chamberlin, 1922			1				EN	B2a,b, C2a, D1				1		VU
Zelotes pygmaeus Miller, 1943	Gnaphosidae	59105	Civizelotes pygmaeus (Miller, 1943)	NT						VU	B2a,b, C2a, D1				1		NT
Zelotes segrex (Simon, 1878)	Gnaphosidae	59114	Zelotes segrex (Simon, 1878)	EN						EN	B2a,b, C2a, D1				1		EN
Zelotes subterraneus (C.L.Koch, 1833)	Gnaphosidae	59121	Zelotes subterraneus (C.L.Koch, 1833)	1	LC	1		LC		1		1			1		
Heteropoda venatoria (Linnaeus, 1767)	Sparassidae	65405	Heteropoda venatoria (Linnaeus, 1767)										1		1		
Micrommata virescens (Clerck, 1757)	Sparassidae	65413	Micrommata virescens (Clerck, 1757)	1	LC	1		LC		1		1	1		1		
Micrommata virescens ornata (Walckenaer, 1802)	Sparassidae	65412	Micrommata virescens ornata (Walckenaer, 1802)					DD							?		
Philodromus albidus Kulczyński, 1897	Sparassidae	63721	Philodromus albidus Kulczyński, 1897	1		1				1					1		
Philodromus aureolus (Clerck, 1757)	Philodromidae	63724	Philodromus aureolus (Clerck, 1757)	1		1		LC		1		1	1		1		
Philodromus buchari Kubcová, 2004	Philodromidae	63729	Philodromus buchari Kubcová, 2004	DD						DD					1		
Philodromus buxi Simon, 1884	Philodromidae	63730	Philodromus buxi Simon, 1884									DD			1		
Philodromus cespitum (Walckenaer, 1802)	Philodromidae	63733	Philodromus cespitum (Walckenaer, 1802)	1		1		LC		1		1	1		1		
Philodromus collinus C.L.Koch, 1835	Philodromidae	63734	Philodromus collinus C.L.Koch, 1835	1		1		1		1			1		1		
Philodromus corticinus (C.L.Koch, 1837)	Philodromidae	63735	Philodromus laricium Simon, 1875							DD					1		DD
Philodromus dispar Walckenaer, 1826	Philodromidae	63739	Philodromus dispar Walckenaer, 1826	1		1		LC		1			1		1		
Philodromus emarginatus (Schrank, 1803)	Philodromidae	63742	Philodromus emarginatus (Schrank, 1803)	1		1		1		1			1		1		
Philodromus fallax Sundevall, 1833	Philodromidae	63743	Philodromus fallax Sundevall, 1833							DD					1		
Philodromus fuscolimbatus Lucas, 1846	Philodromidae	63744	Philodromus fuscolimbatus Lucas, 1846					1		RE?					1		
Philodromus fuscomarginatus (De Geer, 1778)	Philodromidae	63745	Philodromus fuscomarginatus (De Geer, 1778)	DD		1				NT					1		
Philodromus histrio (Latreille, 1819)	Philodromidae	63750	Philodromus histrio (Latreille, 1819)	DD						NT					1		NT
Philodromus longipalpis Simon, 1870	Philodromidae	63754	Philodromus longipalpis Simon, 1870					LC		1					1		
Philodromus margaritatus (Clerck, 1757)	Philodromidae	63756	Philodromus margaritatus (Clerck, 1757)	NT		1				1					1		
Philodromus marmoratus Kulczyński, 1891	Philodromidae	63757	Philodromus marmoratus Kulczyński, 1891	EN						1					1		NT
Philodromus poecilus (Thorell, 1872)	Philodromidae	63764	Philodromus poecilus (Thorell, 1872)	DD		1?		1		1					1		
Philodromus praedatus O.P.-Cambridge, 1871	Philodromidae	63765	Philodromus praedatus O.P.-Cambridge, 1871	DD		1				DD			1		1		
Philodromus rufus Walckenaer, 1826	Philodromidae	63770	Philodromus rufus Walckenaer, 1826	1						1		1			1		
Philodromus vagulus Simon, 1875	Philodromidae	63773	Philodromus vagulus Simon, 1875			EN	D	LC		1			DD		1		LC
Thanatus arenarius Thorell, 1872	Philodromidae	63779	Thanatus arenarius Thorell, 1872	NT		1		LC		1					1		LC
Thanatus atratus Simon, 1875	Philodromidae	63782	Thanatus atratus Simon, 1875	1						1					1		
Thanatus coloradensis Keyserling, 1880	Philodromidae	63784	Thanatus coloradensis Keyserling, 1880							DD					1		
Thanatus formicinus (Clerck, 1757)	Philodromidae	63790	Thanatus formicinus (Clerck, 1757)	1	LC	LC		1		1			1		1		
Thanatus pictus L.Koch, 1881	Philodromidae	63803	Thanatus pictus L.Koch, 1881	CR						EN	B2a,b, C2a, D1				1		VU
Thanatus sabulosus (Menge, 1875)	Philodromidae	63806	Thanatus sabulosus (Menge, 1875)							EN	B2a,b, C2a, D1				1		VU
Thanatus striatus C.L.Koch, 1845	Philodromidae	63807	Thanatus striatus C.L.Koch, 1845	NT						NT					1		NT
Thanatus vulgaris Simon, 1870	Philodromidae	63809	Thanatus vulgaris Simon, 1870 = auratus Simon, 1875	NT				LC		NT					1		LC
Tibellus macellus Simon, 1875	Philodromidae	63811	Tibellus macellus Simon, 1875	CR						CR	B2a,b, C2a, D1				1		EN
Tibellus maritimus (Menge, 1875)	Philodromidae	63812	Tibellus maritimus (Menge, 1875)	1		1				1					1		
Tibellus oblongus (Walckenaer, 1802)	Philodromidae	63815	Tibellus oblongus (Walckenaer, 1802)	1	LC	1		LC		1			1		1		
Coriarachne depressa (C.L.Koch, 1837)	Thomisidae	66492	Coriarachne depressa (C.L.Koch, 1837)	1						1					1		
Cozyptila blackwalli (Simon, 1875)	Thomisidae	66493	Cozyptila blackwalli (Simon, 1875)	1		1		1		1		1?			1		
Diaea dorsata (Fabricius, 1777)	Thomisidae	66496	Diaea dorsata (Fabricius, 1777)	1		1		LC		1			1		1		
Diaea livens Simon, 1876	Thomisidae	66498	Diaea livens Simon, 1876	EN						VU	B2a,b, C2a, D1				1		VU
Ebrechtella tricuspidata (Fabricius, 1775)	Thomisidae	66499	Ebrechtella tricuspidata (Fabricius, 1775)	1	LC	1		LC		1		1	1		1		
Heriaeus hirtus (Latreille, 1819)	Thomisidae	66503	Heriaeus hirtus (Latreille, 1819)	NT				1		EN	B2a,b, C2a, D1	DD			1		DD
Heriaeus melloteei Simon, 1886	Thomisidae	66505	Heriaeus melloteei Simon, 1886												syn.		
Misumena vatia (Clerck, 1757)	Thomisidae	66512	Misumena vatia (Clerck, 1757)	1	LC	1		LC		1		1	1		1		
Monaeses paradoxus (Lucas, 1846)	Thomisidae	66514	Monaeses paradoxus (Lucas, 1846)					DD							1		
Ozyptila atomaria (Panzer, 1801)	Thomisidae	66518	Ozyptila atomaria (Panzer, 1801)	1	LC	1		1		1					1		
Ozyptila brevipes (Hahn, 1826)	Thomisidae	66522	Ozyptila brevipes (Hahn, 1826)	EN				LC		VU	B2a,b, C2a, D1		DD		1		NT

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Ozyptila claveata (Walckenaer, 1837)	Thomisidae	66523	Ozyptila claveata (Walckenaer, 1837)	1	NT	1				1					1		
Ozyptila gertschi Kurata, 1944	Thomisidae	66530	Ozyptila gertschi Kurata, 1944							1					1		
Ozyptila praticola (C.L.Koch, 1837)	Thomisidae	66539	Ozyptila praticola (C.L.Koch, 1837)	1	LC	1		1		1			1		1		
Ozyptila pullata (Thorell, 1875)	Thomisidae	66540	Ozyptila pullata (Thorell, 1875)	1		1		1		1					1		
Ozyptila rauda Simon, 1875	Thomisidae	66541	Ozyptila rauda Simon, 1875	VU		EN	D			1		1			1		NT
Ozyptila scabricula (Westring, 1851)	Thomisidae	66544	Ozyptila scabricula (Westring, 1851)	1		1		1		1			1		1		
Ozyptila simplex (O.P.-Cambridge, 186	Thomisidae	66546	Ozyptila simplex (O.P.-Cambridge, 186	NT						1					1		
Ozyptila trux (Blackwall, 1846)	Thomisidae	66552	Ozyptila trux (Blackwall, 1846)	1		1		1		1			1		1		
Pistius truncatus (Pallas, 1772)	Thomisidae	66555	Pistius truncatus (Pallas, 1772)	1				LC		1					1		
Runcinia grammica (C.L.Koch, 1837)	Thomisidae	66556	Runcinia grammica (C.L.Koch, 1837)					1		1					1		
Synema globosum (Fabricius, 1775)	Thomisidae	66560	Synema globosum (Fabricius, 1775)	1	LC	1		LC		1		1	1		1		
Thomisus onustus Walckenaer, 1806	Thomisidae	66569	Thomisus onustus Walckenaer, 1806	1	LC	1		1		1					1		
Tmarus piger (Walckenaer, 1802)	Thomisidae	66574	Tmarus piger (Walckenaer, 1802)	1	LC	1		LC		1			1		1		
Tmarus stellio Simon, 1875	Thomisidae	66579	Tmarus stellio Simon, 1875							1					1		
Xysticus acerbus Thorell, 1872	Thomisidae	66583	Xysticus acerbus Thorell, 1872	1		1		LC		1					1		
Xysticus albomaculatus Kulczyński, 1891	Thomisidae	66586	Xysticus albomaculatus Kulczyński, 1891							RE?					1		
Xysticus alpicola Kulczyński, 1882	Thomisidae	66587	Xysticus alpicola Kulczyński, 1882												syn.		
Xysticus audax (Schrank, 1803)	Thomisidae	66593	Xysticus audax (Schrank, 1803)	1	LC	1		1		1			1		1		
Xysticus bifasciatus C.L.Koch, 1837	Thomisidae	66595	Xysticus bifasciatus C.L.Koch, 1837	1	LC	1		1		1			1		1		
Xysticus bliteus (Simon, 1875)	Thomisidae	66596	Xysticus bliteus (Simon, 1875)									DD			1		DD
Xysticus cristatus (Clerck, 1757)	Thomisidae	66611	Xysticus cristatus (Clerck, 1757)	1	LC	1		1		1		1	1		1		
Xysticus desidiosus Simon, 1875	Thomisidae	66612	Xysticus desidiosus Simon, 1875									DD			1		DD
Xysticus embriki Kolosváry, 1935	Thomisidae	66616	Xysticus embriki Kolosváry, 1935	EN						DD					1		VU
Xysticus erraticus (Blackwall, 1834)	Thomisidae	66618	Xysticus erraticus (Blackwall, 1834)	1	LC	1		1		1		1	1		1		
Xysticus ferrugineus Menge, 1876	Thomisidae	66619	Xysticus ferrugineus Menge, 1876							1		1			1		
Xysticus gallicus Simon, 1875	Thomisidae	66623	Xysticus gallicus Simon, 1875			EN	D	LC		VU	B2a,b, C2a, D1		DD		1		VU
Xysticus kempeleni Thorell, 1872	Thomisidae	66632	Xysticus kempeleni Thorell, 1872	EN				1		NT					1		LC
Xysticus kochi Thorell, 1872	Thomisidae	66633	Xysticus kochi Thorell, 1872	EN	LC	1		LC		1		1	1		1		
Xysticus lanio C.L.Koch, 1835	Thomisidae	66637	Xysticus lanio C.L.Koch, 1835	1		1		LC		1		1	1		1		
Xysticus lineatus (Westring, 1851)	Thomisidae	66640	Xysticus lineatus (Westring, 1851)	1		EN	B1a, D2	1		NT					1		NT
Xysticus luctator L.Koch, 1870	Thomisidae	66642	Xysticus luctator L.Koch, 1870	1	NT	1		1		1					1		
Xysticus luctuosus (Blackwall, 1836)	Thomisidae	66643	Xysticus luctuosus (Blackwall, 1836)	1	LC	1		1		LC					1		
Xysticus marmoratus Thorell, 1875	Thomisidae	66646	Xysticus marmoratus Thorell, 1875							DD					1		DD
Xysticus ninnii Thorell, 1872	Thomisidae	66650	Xysticus ninnii Thorell, 1872	VU	LC			LC		1					1		LC
Xysticus obscurus Collett, 1877	Thomisidae	66653	Xysticus obscurus Collett, 1877			1				EN	B2a,b, C2a, D1				1		VU
Xysticus robustus (Hahn, 1832)	Thomisidae	66659	Xysticus robustus (Hahn, 1832)	1	LC	1		LC		1					1		
Xysticus sabulosus (Hahn, 1832)	Thomisidae	66660	Xysticus sabulosus (Hahn, 1832)		LC	1		LC		NT					1		LC
Xysticus slovacus Svaton, Pekar & Pridavka, 1999	Thomisidae	66666	Xysticus slovacus Svaton, Pekar & Pridavka, 1999			CR	B1A, D			LC					1		NT
Xysticus strandi Kolosváry, 1934a	Thomisidae	66669	Xysticus strandi Kolosváry, 1934a												?		
Xysticus striatipes L.Koch, 1870	Thomisidae	66670	Xysticus striatipes L.Koch, 1870	1	LC	1		LC		1					1		
Xysticus ulmi (Hahn, 1832)	Thomisidae	66678	Xysticus ulmi (Hahn, 1832)	1		1		LC		1			1		1		
Xysticus viduus Kulczyński, 1898	Thomisidae	66681	Xysticus viduus Kulczyński, 1898					1							1		
Aelurillus v-insignitus (Clerck, 1757)	Salticidae	64816	Aelurillus v-insignitus (Clerck, 1757)	1	LC	1				1					1		
Afraflacilla epiblemoides (Chyzer, 1891)	Salticidae	64817	Afraflacilla epiblemoides (Chyzer, 1891)	CR				DD							1		DD
Asianellus festivus (C.L.Koch, 1834)	Salticidae	64818	Asianellus festivus (C.L.Koch, 1834)	1	LC	1		1		1					1		
Attulus helveolus (Simon, 1871)	Salticidae	64820	Attulus helveolus (Simon, 1871)												syn.		
Ballus chalybeius (Walckenaer, 1802)	Salticidae	64823	Ballus chalybeius (Walckenaer, 1802)	1	LC	1		LC		1		1	1		1		
Carrhotus xanthogramma (Latreille, 1819)	Salticidae	64832	Carrhotus xanthogramma (Latreille, 1819)	NT		1		LC		1		1	NT		1		LC
Chalcoscirtus brevicymbialis Wunderlich, 1980	Salticidae	64835	Chalcoscirtus brevicymbialis Wunderlich, 1980	VU						DD					1		VU
Chalcoscirtus infimus (Simon, 1868)	Salticidae	64838	Chalcoscirtus infimus (Simon, 1868)							DD					1		DD
Cyrba algerina (Lucas, 1846)	Salticidae	64846	Cyrba algerina (Lucas, 1846)					LC							1		LC
Dendryphantes hastatus (Clerck, 1757)	Salticidae	64850	Dendryphantes hastatus (Clerck, 1757)	DD		1		1		LC					1		
Dendryphantes rudis (Sundevall, 1833)	Salticidae	64855	Dendryphantes rudis (Sundevall, 1833)	1		1				1			1		1		
Euophrys frontalis (Walckenaer, 1802)	Salticidae	64863	Euophrys frontalis (Walckenaer, 1802)	1		1		LC		1		1			1		
Evarcha arcuata (Clerck, 1757)	Salticidae	64888	Evarcha arcuata (Clerck, 1757)	1	LC	1		LC		1			1		1		
Evarcha falcata (Clerck, 1757)	Salticidae	64891	Evarcha falcata (Clerck, 1757)	1	LC	1		LC		1		1	1		1		

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Evarcha jucunda (Lucas, 1846)	Salticidae	64893	Evarcha jucunda (Lucas, 1846)							1?					?		
Evarcha laetabunda (C.L.Koch, 1846)	Salticidae	64894	Evarcha laetabunda (C.L.Koch, 1846)	1	LC	1		LC		1					1		
Heliophanus aeneus (Hahn, 1831)	Salticidae	64906	Heliophanus aeneus (Hahn, 1831)	1		1		LC		1					1		
Heliophanus auratus C.L.Koch, 1835	Salticidae	64911	Heliophanus auratus C.L.Koch, 1835	1		1		LC		1					1		
Heliophanus cupreus (Walckenaer, 1802)	Salticidae	64917	Heliophanus cupreus (Walckenaer, 1802)	1		1		LC		1		1	1		1		
Heliophanus dampfi Schenkel, 1923	Salticidae	64918	Heliophanus dampfi Schenkel, 1923	1		VU	D			VU					1		VU
Heliophanus dubius C.L.Koch, 1835	Salticidae	64920	Heliophanus dubius C.L.Koch, 1835	1		1		1		1			1		1		
Heliophanus flavipes (Hahn, 1832)	Salticidae	64925	Heliophanus flavipes (Hahn, 1832)	1	LC	1		LC		1		1	1		1		
Heliophanus kochii Simon, 1868	Salticidae	64929	Heliophanus kochii Simon, 1868					LC		1					1		
Heliophanus lineiventris Simon, 1868	Salticidae	64931	Heliophanus lineiventris Simon, 1868	EN						EN					1		EN
Heliophanus melinus L.Koch, 1867	Salticidae	64932	Heliophanus melinus L.Koch, 1867	1						RE?					1		NT
Heliophanus patagiatus Thorell, 1875	Salticidae	64936	Heliophanus patagiatus Thorell, 1875	EN		VU	D	1		LC					1		LC
Heliophanus simplex Simon, 1868	Salticidae	64942	Heliophanus simplex Simon, 1868					LC		1			1		1		
Heliophanus tribulosus Simon, 1868	Salticidae	64943	Heliophanus tribulosus Simon, 1868							EN	B2a,b, C2a, D1				1		EN
Leptorchestes berolinensis (C.L.Koch, 1846)	Salticidae	64956	Leptorchestes berolinensis (C.L.Koch, 1846)	VU				LC		1			1		1		
Macaroeris nidicolens (Walckenaer, 1802)	Salticidae	64967	Macaroeris nidicolens (Walckenaer, 1802)	1				LC		1			DD		1		
Marpissa muscosa (Clerck, 1757)	Salticidae	64969	Marpissa muscosa (Clerck, 1757)	1		1		LC		1			1		1		
Marpissa nivoyi (Lucas, 1846)	Salticidae	64970	Marpissa nivoyi (Lucas, 1846)	1						1					1		
Marpissa pomatia (Walckenaer, 1802)	Salticidae	64971	Marpissa pomatia (Walckenaer, 1802)					1		VU	B2a,b, C2a, D1				1		LC
Marpissa radiata (Grube, 1859)	Salticidae	64972	Marpissa radiata (Grube, 1859)	DD						LC					1		LC
Mendoza canestrini (Ninni, 1868)	Salticidae	64973	Mendoza canestrini (Ninni, 1868)	EN						EN	B2a,b, C2a, D1				1		EN
Myrmarachne formicaria (De Geer, 1778)	Salticidae	64988	Myrmarachne formicaria (De Geer, 1778)	1	LC			LC		1					1		
Neon levis (Simon, 1871)	Salticidae	64996	Neon levis (Simon, 1871)					LC		LC					1		LC
Neon pictus Kulczynski, 1891	Salticidae	64998	Neon pictus Kulczynski, 1891		LC										1		LC
Neon rayi (Simon, 1875)	Salticidae	64999	Neon rayi (Simon, 1875)	EN						VU	B2a,b, C2a, D1				1		VU
Neon reticulatus (Blackwall, 1853)	Salticidae	65000	Neon reticulatus (Blackwall, 1853)	1		1		LC		1			1		1		
Neon valentulus Falconer, 1912	Salticidae	65002	Neon valentulus Falconer, 1912			1		LC		VU	B2a,b, C2a, D1				1		NT
Pellenes nigrociliatus (Simon, 1875)	Salticidae	65020	Pellenes nigrociliatus (Simon, 1875)	VU				LC		1		1			1		LC
Pellenes seriatus (Thorell, 1875)	Salticidae	65022	Pellenes seriatus (Thorell, 1875)					1							1		
Pellenes tripunctatus (Walckenaer, 1802)	Salticidae	65024	Pellenes tripunctatus (Walckenaer, 1802)	1	LC	1				1					1		
Philaeus chrysops (Poda, 1761)	Salticidae	65026	Philaeus chrysops (Poda, 1761)	NT	LC	CR	B1a, D	LC		1					1		NT
Philaeus varicus (Simon, 1868)	Salticidae	65030	Philaeus varicus (Simon, 1868)					1??							?		
Phintella castriesiana (Grube, 1861)	Salticidae	65031	Phintella castriesiana (Grube, 1861)					LC		RE?					1		LC
Phlegra bresnieri (Lucas, 1846)	Salticidae	65033	Phlegra bresnieri (Lucas, 1846)					DD		1					1		
Phlegra cinereofasciata Simon, 1868	Salticidae	65034	Phlegra cinereofasciata Simon, 1868	EN	LC			1		VU	B2a,b, C2a, D1				1		LC
Phlegra fasciata (Hahn, 1826)	Salticidae	65035	Phlegra fasciata (Hahn, 1826)	1	LC	1		LC		1					1		LC
Pseudeuophrys erratica (Walckenaer, 1825)	Salticidae	65049	Pseudeuophrys erratica (Walckenaer, 1825)	DD	LC	1		LC		1			1		1		LC
Pseudeuophrys lanigera (Simon, 1871)	Salticidae	65050	Pseudeuophrys lanigera (Simon, 1871)	1											1		
Pseudeuophrys obsoleta (Simon, 1868)	Salticidae	65052	Pseudeuophrys obsoleta (Simon, 1868)	LC	LC					1					1		
Pseudeuophrys vafra (Blackwall, 1867)	Salticidae	65054	Pseudeuophrys vafra (Blackwall, 1867)					1		DD					1		
Pseudicius encarpatus (Walckenaer, 1802)	Salticidae	65058	Pseudicius encarpatus (Walckenaer, 1802)	DD				1		1					1		
Salticus cingulatus (Panzer, 1797)	Salticidae	65075	Salticus cingulatus (Panzer, 1797)	1		1		LC		1			1		1		
Salticus mutabilis Lucas, 1846	Salticidae	65088	Salticus mutabilis Lucas, 1846					DD							?		
Salticus quagga Miller, 1971	Salticidae	65095	Salticus quagga Miller, 1971	1						DD					1		DD
Salticus scenicus (Clerck, 1757)	Salticidae	65097	Salticus scenicus (Clerck, 1757)	1		1		LC		1			1		1		
Salticus zebraneus (C.L.Koch, 1837)	Salticidae	65109	Salticus zebraneus (C.L.Koch, 1837)	1		1		LC		1					1		
Sibianor aurocinctus (Ohlert, 1865)	Salticidae	65111	Sibianor aurocinctus (Ohlert, 1865)	1		1				1					1		
Sibianor larae Logunov, 2001	Salticidae	65112	Sibianor larae Logunov, 2001			EN	D			DD					1		EN
Sibianor tantulus (Simon, 1868)	Salticidae	65113	Sibianor tantulus (Simon, 1868)							DD					1		DD
Sitticus caricis (Westring, 1861)	Salticidae	65116	Sitticus caricis (Westring, 1861)	EN		1		v		1					1		
Sitticus distinguendus (Simon, 1868)	Salticidae	65118	Sitticus distinguendus (Simon, 1868)	1		EN	D	LC		NT					1		NT
Sitticus dzieduszyckii (L.Koch, 1870)	Salticidae	65119	Sitticus dzieduszyckii (L.Koch, 1870)	EN		EN	B1a, D	LC		NT		EN			1		VU
Sitticus floricola (C.L.Koch, 1837)	Salticidae	65121	Sitticus floricola (C.L.Koch, 1837)	VU		1		LC		1			1		1		LC
Sitticus longipes (Canestrini, 1873)	Salticidae	65126	Sitticus longipes (Canestrini, 1873)							1?					?		
Sitticus penicillatus (Simon, 1875)	Salticidae	65129	Sitticus penicillatus (Simon, 1875)	NT				LC		1					1		LC
Sitticus pubescens (Fabricius, 1775)	Salticidae	65130	Sitticus pubescens (Fabricius, 1775)	1		1		LC		1		1	1		1		

Name of species (Fauna Europea)	Family	ID	Name of species (Platnick 2014, version14.5)	CZ RL	HU RL	PL RL	Crit	RO RL	Crit	SK RL	Crit	RS RL	UA RL	Crit	Status	Endemic	Carp RL
Sitticus rupicola (C.L.Koch, 1837)	Salticidae	65133	Sitticus rupicola (C.L.Koch, 1837)	1		1		LC		1			1		1		
Sitticus saltator (O.P.-Cambridge, 18	Salticidae	65134	Sitticus saltator (O.P.-Cambridge, 18	EN		LC				VU	B2a,b, C2a, D1				1		VU
Sitticus saxicola (C.L.Koch, 1846)	Salticidae	65135	Sitticus saxicola (C.L.Koch, 1846)	DD		EN	C, D	LC		1			DD		1		NT
Sitticus strandi Kolosváry, 1934a	Salticidae	65137	Sitticus strandi Kolosváry, 1934a							1?					?		
Sitticus terebratus (Clerck, 1757)	Salticidae	65139	Sitticus terebratus (Clerck, 1757)			EN	C, D	LC		NT			NT		1		
Sitticus zimmermanni (Simon, 1877)	Salticidae	65143	Sitticus zimmermanni (Simon, 1877)					LC		NE					1		LC
Synageles hilarulus (C.L.Koch, 1846)	Salticidae	65146	Synageles hilarulus (C.L.Koch, 1846)	EN				LC		NT					1		NT
Synageles subcingulatus (Simon, 1878)	Salticidae	65150	Synageles subcingulatus (Simon, 1878)	CR						1					1		NT
Synageles venator (Lucas, 1836)	Salticidae	65151	Synageles venator (Lucas, 1836)	1	LC	1				1		1			1		
Talavera aequipes (O.P.-Cambridge, 1871)	Salticidae	65153	Talavera aequipes (O.P.-Cambridge, 1871)	1		1		1		1					1		
Talavera aperta Miller, 1971	Salticidae	65154	Talavera aperta Miller, 1971	NT						NT					1		NT
Talavera milleri Brignoli, 1983	Salticidae	65158	Talavera milleri Brignoli, 1983	CR						DD					1		VU
Talavera monticola (Kulczyński, 1884)	Salticidae	65159	Talavera monticola (Kulczyński, 1884)			EN	D			VU	B2a,b, C2a, D1				1		VU
Talavera parvistyla Logunov & Kronestedt, 2003	Salticidae	65160	Talavera parvistyla Logunov & Kronestedt, 2003			1				DD					1		DD
Talavera petrensis (C.L.Koch, 1837)	Salticidae	65161	Talavera petrensis (C.L.Koch, 1837)	VU		VU	D			1					1		NT
Talavera thorelli (Kulczyński, 1891)	Salticidae	65163	Talavera thorelli (Kulczyński, 1891)			CR	D	1		DD					1		DD
Yllenus vittatus Thorell, 1875	Salticidae	65183	Yllenus vittatus Thorell, 1875									EN			1		VU

Name of species (Fauna Europea)	Family	ID	Name of species (Platnick 2014, version14.5)	Synonym /misidentification
Hypsocephalus pusillus (Menge 1869)	Linyphiidae	60728	Hypsocephalus pusillus (Menge 1869)	Hypsocephalus dahli (Lessert, 1909) - code ID 60724
Meioneta mollis (O.P.-Cambridge, 1871)	Linyphiidae	60916	Agyneta mollis (O.P.-Cambridge, 1871)	Meioneta tenera (Menge 1869) - code ID 60933
Pocadicnemis carpatica (Chyzer, 1894)	Linyphiidae	61202	Pocadicnemis carpatica (Chyzer, 1894)	Maso carpathicus Chyzer
Poeciloneta variegata (Blackwall, 1841)	Linyphiidae	61206	Poeciloneta variegata (Blackwall, 1841)	Poeciloneta globosa (Wider, 1834)
Porrhomma lativelum Tretzel, 1956	Linyphiidae	61219	Porrhomma microps (Roewer, 1931)	junior synonym of Porrhomma microps (Roewer, 1931)
Troxochrus cirrifrons (O. P.-Cambridge, 1871)	Linyphiidae	61538	Troxochrus cirrifrons (O. P.-Cambridge, 1871)	Troxochrus scabriculus cirrifrons (O.P.-Cambridge, 1871)
Hahnia difficilis Harm, 1966	Hahniidae	59186	Hahnia difficilis Harm, 1966	Hahnia parva Kulczyński, 1882 probably
Coelotes pickardi carpathensis Ovtchinnikov, 1999 syn Coelotes pastor carpathensis Ovtchinnikov, 1999	Amaurobiidae	54829	Coelotes pickardi carpathensis Ovtchinnikov, 1999 syn Coelotes pastor carpathensis Ovtchinnikov, 1999	Coelotes pastor carpathensis Ovtchinnikov, 1999
Gnaphosa alpica Simon, 1878	Gnaphosidae	58782	Gnaphosa alpica Simon, 1878	misidentification with Gnaphosa modestior Kulczyński, 1897
Philodromus corticinus (C.L.Koch, 1837)	Philodromidae	63735	Philodromus laricium Simon, 1875	Philodromus corticinus (C.L.Koch, 1837)
Heriaeus hirtus (Latreille, 1819)	Thomisidae	66503	Heriaeus hirtus (Latreille, 1819)	Heriaeus melloteei Simon, 1886 in records from Europe
Heriaeus melloteei Simon, 1886	Thomisidae	66505	Heriaeus melloteei Simon, 1886	misidentification with Heriaeus hirtus (Latreille, 1819)
Xysticus alpicola Kulczyński, 1882	Thomisidae	66587	Xysticus alpicola Kulczyński, 1882	junior synonym of Xysticus gallicus (Simon) Rozwałka unpubl.
Xysticus gallicus Simon, 1875	Thomisidae	66623	Xysticus gallicus Simon, 1875	Xysticus alpicola Kulczyński, 1882 code 66587 is junior synonym of Xysticus gallicus (Simon) Rozwałka unpubl.
Attulus helveolus (Simon, 1871)	Salticidae	64820	Attulus helveolus (Simon, 1871)	junior synonym of Sitticus distinguendus
Sitticus distinguendus (Simon, 1868)	Salticidae	65118	Sitticus distinguendus (Simon, 1868)	Attulus helveolus (Simon, 1871)

DRAFT RED LIST OF DRAGONFLIES (ODONATA) OF THE CARPATHIANS

Compiled by Dušan Šácha

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Dragonflies in the IUCN World Red List and European Red List

Within the latest version of the IUCN Red List (http://www.iucnredlist.org/search, II/2014), there are 2752 species of dragonflies evaluated. Out of them, 1 is extinct (EX), 55 critically endangered (CR), 87 endangered (EN), 123 vulnerable (VU), 112 near threatened (NT or LR/nt) and 823 data deficient (DD). Least concern (LC or LR/lc) are 1551 species.
Out of the IUCN list, there are 83 species that are native to Europe (including overseas territories). CR: 1, EN: 2, VU: 4, NT or LR/nt: 8, DD: 2 and LC or LR/lc: 66. Among NT there are 3 species, which are native to the Carpathians: *Cordulegaster bidentata*, *C. heros* and *Nehalennia speciosa*. Among LC there are 32 species native to the Carpathians or at least once reported to occur there. The rest 43 species have not been evaluated so far.
Within the European Red List (Kalkman *et al.* 2010), all the species have been assessed. The assessment has been carried out separately for Europe in geographical sense and for EU 27.

Europe: 137 species evaluated, CR 3, EN 5, VU 13, NT 15, LC 96, DD 5.

EU 27: 134 species evaluated, CR 3, EN 6, VU 13, NT 18, LC 91, DD 3.

These Carpathian species appear in the European Red List as threatened (categories Europe / EU 27): *Lestes macrostigma* (VU / EN), *Sympetrum depressiusculum* (VU / VU), *Nehalennia speciosa* (NT / VU). To the NT category fall: *Coenagrion ornatum* (NT / NT), *C. armatum* (LC / NT), *Aeshna viridis* (NT / NT), *Cordulegaster bidentata* (NT / NT), *C. heros* (NT / NT), *Leucorrhinia albifrons* (LC / NT) and *L. caudalis* (LC / NT). DD species is *Lestes parvidens* (LC / DD). Moreover, *Cordulegaster picta*, that is not native to the Carpathians but once reported from Serbia, is rated as VU / VU, and C. insignis (similarly from Serbia) as EN / EN.

Summary

There are 78 species of dragonflies ever reported from the Carpathians in total. Among them, two species are represented by dubious historical data only; no specimens exist which would confirm the identification. Four species are identified correctly and there is a material proving the identification, however they are vagrants or occasional occurrences (blown by the wind etc.) only and therefore cannot be considered permanent members of the Carpathian fauna. The rest 72 species are proven to have breeding populations in the region.
Since Carpathians are a very diverse bioregion in terms of their north-south extent and altitude levels, the dragonfly fauna constitutes mainly of Eurasian elements, accompanied by a fair proportion of thermophilous (Mediterranean) and boreo-mountainous elements. Most species are stagnicolous, whereas rheophilous species represent only a minority.
With respect to quality of data, there is a bit inconsistency in-between the individual countries. Whereas countries in the north of the range (PL, CZ, SK, HU) have relatively good and ample datasets, countries in the south and east (UA, RO, RS) show deficit of knowledge or even locally profound lack of data. This fact showed up most visibly in Serbia, where the species have been classified either LC, or DD, and no other categories came to use.
There also seems to be some variability in interpretation of the IUCN methodology among individual experts, resulting in a rather different classification of the same species in the individual countries, that cannot be always and fully explained only by differences of the species populations, trends, areas etc. Taking all this information into account, the submitted list can only be considered the very first version of the Carpathian Red List of Dragonflies. A lot of effort still has to be put into research, statistical analysis and providing and maintaining consistent set of data before the Red List, strictly following the IUCN rules, can be compiled.
Overview of the status of dragonflies of the Carpathians is in Table 1.

Method of assessment

Standard method of the IUCN (2001, 2003 – Categories and Criteria 3.1 as applied at the regional level) was used. Where possible, the quantification of trends was based on existing data. Because of the partial incompatibility of datasets between countries and missing historical data as a baseline, in some cases also methods of inference and projection came to use, building on the habitat data, existing threats, climate change scenarios and nature conservation policies.
Threshold setting for the eligibility of the species:
- species with no valid proof of their occurrence have not been considered (NE),
- vagrant species have been excluded from the evaluation (NA),
- autochthonous species (i.e. with breeding populations) and regular migrants have all been assessed,
- these species have been assessed at the species level (breeding and migrant populations, if existing, together, not separately).

Notes to taxonomy and nomenclature

Within the project and its online database, the Fauna Europaea (FE) was taken as a valid taxonomy and nomenclature basis. However, it has to be said, that there are several differences compared to the up-to-date World Odonata List (WOL; Schorr & Paulson 2013).
The most prominent is taxonomic position of *Orthetrum anceps* (Schneider, 1845), which WOL considers a true species, whereas FE otherwise. We accepted FE, because there are 5 phaenotypes of *O. coerulescens – anceps* complex, of which only two extreme are easily identified and the rest are intermediate (hybrids), which occur over wide extent of the Carpathians. This question of *O. anceps* taxonomic position still needs to be resolved; nonetheless it was not the aim of the BioREGIO project.
Among others there is discrepancy in use of the generic names *Lestes – Chalcolestes*, *Erythromma – Cercion*, *Anax – Hemianax*, *Anaciaeschna – Aeshna*, *Gomphus – Stylurus*. Alongside, small differences in authors or years of description may appear in the full names.
For this reason, it was decided to use names according to WOL in the printed publication. FE names are added, since used in the online version. Where appropriate, synonyms reflecting European usage are given.

Notes to species selection

All the eligible species have been evaluated.

Overview of the status and / or endemism of species in the Carpathians

There are no Carpathian endemites among dragonflies.
The Carpathian Regional Red List Categories and number of species in respective categories:
LC: 43, NT (or *NT): 10, VU (or *VU): 5, EN (or *EN): 4, DD: 10.

In general, tyrphophiles and species with oreal or boreal distribution patterns prevail among TH categories, whereas thermophiles and Eurasian species are of lower risk categories.

Main threats

There are several main factors of threat to dragonflies in the Carpathians.

Human caused factors:
- climate change and resulting habitat changes
- water regime mismanagement
- forestry
- tourism, winter sports and infrastructure (roads, hotels etc.)
- intensive fish farming
- peat excavation

Natural factors:
- overgrowing and natural succession

LC

Mostly species that are:
- widespread or expanding
- have not particular ecological demands or their sites are protected
- have enough nearby sources for potential immigration and re-colonisation
- usually are rated not threatened in the individual countries (exceptions may occur, where the national category has been assigned due to low number of sites or small populations, but overall in the Carpathians there are enough locations and large enough populations)

Calopteryx splendens (Harris, 1782)
Calopteryx virgo (Linnaeus, 1758)
Lestes barbarus (Fabricius, 1798)
Lestes dryas (Kirby, 1890)
Lestes sponsa (Hansemann, 1823)
Chalcolestes viridis (Vander Linden, 1825), syn. *Lestes viridis*
Sympecma fusca (Vander Linden, 1820)
Coenagrion puella (Linnaeus, 1758)
Erythromma lindenii (Selys, 1840), syn *Cercion lindenii*
Erythromma najas (Hansemann, 1823)
Erythromma viridulum (Charpentier, 1840)
Pyrrhosoma nymphula (Sulzer, 1776)
Enallagma cyathigerum (Charpentier, 1840)
Ischnura elegans (Vander Linden, 1820)
Ischnura pumilio (Charpentier, 1825)
Platycnemis pennipes (Pallas, 1771)
Aeshna affinis (Vander Linden, 1820)
Aeshna cyanea (Müller, 1764)
Aeshna juncea (Linnaeus, 1758)
Aeshna mixta (Latreille, 1805)
Anaciaeschna isoceles (Müller, 1767), syn. *Aeshna isoceles*
Anax imperator (Leach, 1815)
Anax parthenope (Selys, 1839)
Gomphus vulgatissimus (Linnaeus, 1758)
Onychogomphus forcipatus (Linnaeus, 1758)

Ophiogomphus cecilia (Geoffroy in Fourcroy, 1785)
Cordulegaster bidentata (Selys, 1843)
Cordulia aenea (Linnaeus, 1758)
Somatochlora metallica (Vander Linden, 1825)
Libellula depressa (Linnaeus, 1758)
Libellula quadrimaculata (Linnaeus, 1758)
Orthetrum albistylum (Selys, 1848)
Orthetrum brunneum (Fonscolombe, 1837)
Orthetrum cancellatum (Linnaeus, 1758)
Orthetrum coerulescens (Fabricius, 1798)
Crocothemis erythraea (Brullé, 1832)
Sympetrum danae (Sulzer, 1776)
Sympetrum flaveolum (Linnaeus, 1758)
Sympetrum fonscolombii (Selys, 1840)
Sympetrum meridionale (Selys, 1841)
Sympetrum sanguineum (Müller, 1764)
Sympetrum striolatum (Charpentier, 1840)
Sympetrum vulgatum (Linnaeus, 1758)

NT

Species that are in their nature similar to LC species, but not so markedly (therefore with a potential prospect of ending up VU or higher long term). On the other hand, so far do not qualify for any TH category.

Lestes virens (Charpentier, 1825)
SK: VU, CZ: NT, PL: NT, UA: DD, HU: LC, RO: VU, RS: DD

Aeshna grandis (Linnaeus, 1758)
SK: *NT, CZ: NT, PL: LC, UA: *NT, RO: VU

Stylurus flavipes (Charpentier, 1825)
syn.: *Gomphus flavipes*
SK: *NT, CZ: VU, HU: LC, RO: VU

Cordulegaster heros (Theischinger, 1979)
SK: VU, CZ: DD, RO: VU, RS: LC

Libellula fulva (Müller, 1764)
SK: EN, CZ: EN, UA: DD, HU: LC, RO: NT

Sympetrum pedemontanum (Müller, 1766)
SK: *VU, CZ: VU, PL: NT, UA: *VU, HU: LC, RO: VU

*NT

Species that would overall qualify for VU according to mainly B, C or D criteria (and in individual countries or at least the most prominent ones = SK, RO and UA mainly did), but have nearby sources for potential recolonisation, which lowers the risk of extinction.

Coenagrion hastulatum (Charpentier, 1825)
SK: VU, CZ: VU, PL: NT, UA: DD, RO: VU

Coenagrion ornatum (Selys, 1850)
SK: VU, PL: RE, HU: NT, RO: VU

Leucorrhinia dubia (Vander Linden, 1825)
SK: VU, CZ: EN, PL: VU, UA: DD, RO: NT

Leucorrhinia pectoralis (Charpentier, 1825)
SK: *VU, CZ: *VU, PL: DD, UA: DD, HU: LC, RO: NE

VU

Lestes macrostigma (Eversmann, 1836)
Population:
Breeding population in RO, where VU (A1c). Decline caused by habitat loss and drought.
Accidental data from PL and CZ.
Elsewhere no data.
Trend decreasing Europewide (Kalkman et al., 2010).
Threats:
Threats due to climate change likely (drought, habitat change).
Criteria:
A qualifies for VU (A1c – decline in the area or quality of habitat)
B –
C –
D –
E –
Criteria are accepted as submitted by the RO expert (since the only country with breeding population).
Possibility of recolonisation:
Good flier. Populations in HU, RO, CZ, AT, MO, BG, SLO, CR, in RO, HU and AT rather close to Carpathians. Immigration could be hindered by lack of appropriate habitats. At least in Southern Moravia the prospects are not bad, thanks to active landscape management measures (undertaken or planned). Overall, immigration so far rated as inadequate to provide high enough chance for recolonisation in the case of local extinction (accepted as submitted by the RO expert).
Category:
VU (A1c).
Accepted as submitted by the RO expert.

Somatochlora alpestris (Selys, 1840)
Population:
Breeding population in SK, where *NT. Appears mainly in Northern SK (Tatry Mts. and surrounding regions), where widespread and locally dominant.
Population also in PL, where DD. Distributed in Tatry and Orawa regions.
In CZ one population, CR (B2a, C2).
Population in RO, where EN (C2ai). Sites map the main arc of the Carpathians. Trend positive, perhaps due to more research effort in recent years? Expected to be negatively influenced by the climate change.
Population also in UA, where EN (B1ab(iii, v)+2ab(iii,v); C2b; D). Small population (less than 250 ind.), just a few sites, distributed next to the RO border.
Populations in SK, PL and CZ can be considered one location. Populations in RO and UA can be considered second location.
Elsewhere no data.
Trend in Europe unknown (Kalkman et al., 2010).
Threats:
Climate change (drought, change in weather pattern and resulting habitat change), tourism, forestry, winter sports. Natural habitat change (overgrowing, succession). Potential threat in acidification of water, although successfully mitigated in the last years.
Criteria:
A –
B –
C qualifies for VU (C2a(i) – population estimated under 10000 + expected influence of climate change + low population densities meaning no subpopulation exceeding 1000)
D qualifies for VU (D2 – only 2 locations, meaning vulnerability to sudden impacts)
E –
Possibility of recolonisation:
Good flier. Populations in CZ, PL, AT, D, CH, IT, in CZ and PL rather close to Carpathians. Immigration could be hindered by lack of appropriate habitats (corridors). Overall, immigration so far rated as inadequate to provide high enough chance for recolonisation in the case of local extinction.
Category:
VU (C2a(i), D2).

Sympetrum depressiusculum (Selys, 1841)
Population:
Breeding population in RO, where CR (A2c). Only few recent data, trend badly negative.
Population in HU, where VU (no criteria). Distributed in two orographic units, trend rated as stable.
Population also in CZ, where CR (B2ac, C2b). Huge fluctuations in the population size, only 5 sites (all in N Moravia), of which 2 with numerous populations. Trend negative (not confirmed in many regions in last 15 years).
In PL DD. Only historical data.
No records but expected to be present in UA.
Elsewhere no data.
Trend decreasing Europewide (Kalkman et al., 2010).
Threats:
Mismanagement of the sites (water regime, intensification of fish farming).
Criteria:
A –
B qualifies for VU (B2ab(i, ii, iii, iv, v) – decrease in area, population, habitat and sites + 4 locations + AOO less than 2000 km^2 but more than 500 km^2, according to the maps)
C –
D qualifies for VU (D2 – only 4 locations, vulnerability to sudden impacts)
E –
Possibility of recolonisation:
Populations in most countries (HU, AT, SK, CZ, PL, UA, SLO, CR, MO, BG...), some of them not far away from the Carpathians. Dispersion poorer compared to other congeneric species. Immigration could be hindered by lack of appropriate habitats. In accord with decreasing trend in Europe, immigration so far not considered significant.
Category:
VU (B2ab(i, ii, iii, iv, v), D2).

*VU

Leucorrhinia albifrons (Burmeister, 1839)
Population:
Breeding population in CZ, where CR (B2ac, C2b). Four sites with very small populations or only individuals. Huge fluctuations, trends cannot be assessed. Outside Carpathians in S and W Bohemia – sizeable populations.
Population also in PL, where DD. Distributed in Silesia and SE PL. Lack of appropriate habitats in Carpathians.
Elsewhere no data.
European population stable (Kalkman et al., 2010).
Threats:
Not serious, according to the inhabited habitats (fish ponds). Intensification of fish farming and mismanagement of water regime.
Criteria:
A –
B qualifies for EN (B2ac(iv) – AOO less than 500 km^2, might be even less than 10 km^2, but 2 locations + extreme fluctuations in population size reported)
C –
D qualifies for EN (C2b – population probably exceeds 250, but less than 2500 + population decline and fluctuations)
E –
Criteria accepted from the CZ list, with downgrading the category one step to EN because of PL population.
Possibility of recolonisation:
Good flier. Populations in CZ, PL, AT, D, even not far away from existing sites. Immigration could be hindered by lack of appropriate habitats. Congeneric species known to colonise new habitats in recent years. Immigration and potential recolonisation considered likely. Therefore category downgraded one step to *VU.
Category:
*VU (B2ac(iv), C2b).

Leucorrhinia rubicunda (Linnaeus, 1758)
Population:
Breeding population in SK, where CR (C2a(ii)). Only 4 known sites, of which 2 in NE and 2 in NW. Of NW sites one probably newly colonised (first discovery in 2013), from the other no data for the last 10 years. In NE data on population size vary, could indicate fluctuations or population decrease.
Population in CZ, where EN (B2ac(iv), C2b). Only 3 sites, small populations. Not enough suitable habitats.

Trend unknown.
Population in PL, where DD. Three groups of sites – Tatry, Gorce, Bieszczady Zachodnie.
All the populations lie on the southern limit of species´ range and are likely to constitute at max. two locations (western and eastern).
Elsewhere no data.
Trend decreasing Europewide (Kalkman et al., 2010).

Threats:
Climate change (drought, change in weather pattern and resulting habitat change), forestry, peat excavation. Natural habitat change (overgrowing, succession). Potential threat in acidification of water, although successfully mitigated in the last years.

Criteria:
A –
B qualifies for EN (B2ac(iv) – AOO less than 500 km^2, might be even less than 10 km^2, but 2 locations + extreme fluctuations in population size indicated)
C –
D qualifies for EN (C2b – population probably exceeds 250, but less than 2500 + population decline and fluctuations)
E –

Possibility of recolonisation:
Good flier. Populations in PL, CZ, UA, D, in PL and CZ sites close to the Carpathians. SK proves potential for immigration and recolonisation. Therefore category downgraded one step to *VU.

Category:
*VU (B2ac(iv), C2b).

EN

Nehalennia speciosa (Charpentier, 1840)

Population:
Breeding population in RO, where CR (C with no exact specification) – only one population of estimated size 200 individuals at max. and 400 m^2 area.
Population also in PL, where DD. Size of population appr. 400 individuals. Stable, breeding.
SK only an old and doubtful record.
Elsewhere no data, but is inconspicuous and could be neglected.
Trend decreasing Europewide (Kalkman et al., 2010).

Threats:
Threats due to climate change very likely (drought, habitat change).

Criteria:
A –
B qualifies for EN (B1ab(iii)+2ab(iii) – EOO less than 100 km^2 and AOO less than 100 km^2 but 2 locations + prognosed habitat deterioration due to climate change)
C qualifies for VU (C2a(i) – population less than 2500, but subpopulations more than 250 + prognosed decreasing trend due to climate change combined with decreasing trend in Europe)
D qualifies for VU (D1+2 – total population around 600, 2 locations)
E –

Possibility of recolonisation:
Poor dispersion, retreat from the former extent of the area. Populations in PL, CZ, AT, D, BLR, but rather far away with respect to vagility of the species. Recolonisation unlikely.

Category:
EN: B1ab(iii)+2ab(iii).

Aeshna subarctica (Walker, 1908)

Population:
Breeding population in PL, where EN: B2ab(ii,iii,iv). In total 9 sites in Tatry and Orawa regions, where stable. Sites mostly protected.
Population also in SK, where CR: B1ab(iii,v)+2ab(iii,v), C2a(i,ii), D. Only one site in Tatry region, under human pressure, not sufficient data but trend seems to be decreasing.
RO: one site, breeding not confirmed but probable. CR: C with no exact specification.
Polish and Slovak populations can be considered just one location.
Elsewhere no data.
Trend decreasing Europewide (Kalkman et al., 2010).

Threats:
Climate change (drought, change in weather pattern) is very likely to cause degradation of habitats. Threats also due to tourism, winter sports, forestry. Natural habitat change (overgrowing, succession). Competition from *A. juncea*, but not easily quantifiable. Potential threat in acidification of water, although successfully mitigated in the last years.

Criteria:
A –
B qualifies for EN (B1ab(iii,iv,v) – EOO more than 100 km^2 but less than 5000 km^2 + 2 locations + prognosed habitat deterioration and population decline due to climate change and human pressure)
C qualifies for EN (C2a(i) – total population likely to exceed 250 but less than 2500 + individual subpopulations under 250 + prognosed decreasing trend due to climate change and human pressure)
D qualifies for VU (D1+2 – population under 1000 + only 2 locations)
E –

Possibility of recolonisation:
Populations in PL, CZ, AT, D, BLR, but rather far away with respect to lack of appropriate habitats. Recolonisation uncertain to unlikely.

Category:
EN: B1ab(iii,iv,v), C2a(i).

Somatochlora arctica (Zetterstedt, 1840)

Population:
Breeding population in RO, where CR: C with no exact specification. There were two sites, of which one has been destroyed. The second population still survives, although under pressure (planned road revamp, more tourists).
Population in PL, where CR: B2ab(ii,iii,iv). Sites in Tatry and Orawa regions, where stable.
Population in SK, where CR: C2a(ii), D. Sites in Tatry foothills and adjacent regions (Orava, Liptov, Spiš). Sites mostly protected, nonetheless threatened by climate change and under human pressure, trend seems to be decreasing (at least 2 sites dried in 2012). In 2013 two new sites discovered, therefore SK category needs to be reassessed.
Breeding population also in CZ, where CR: B2a, C2. Can be overlooked because of the type of habitat, in rest of CZ not rare and possibly stable. CZ Carpathians – lack of suitable habitats.
Czech, Polish and Slovak populations can be considered just one location.
Elsewhere no data.
Trend in Europe unknown (Kalkman et al., 2010).

Threats:
Climate change is very likely to cause degradation of habitats. Threats also due to tourism, winter sports, forestry. Natural habitat change (overgrowing, succession). Potential threat in acidification of water, although successfully mitigated in the last years.

Criteria:
A –
B qualifies for EN (B1ab(iii,iv,v) – EOO more than 100 km^2 but less than 5000 km^2 + 2 locations + prognosed habitat deterioration and population decline due to climate change and human pressure)
C qualifies for EN (C2a(i) – total population likely to exceed 250 but less than 2500 + individual subpopulations under 250 + reported demise of several populations and prognosed decreasing trend due to climate change and human pressure)
D qualifies for VU (D1+2 – population under 1000 + only 2 locations)
E –

Possibility of recolonisation:
Populations in PL, CZ, AT, D, BLR, but rather far away with respect to lack of appropriate habitats. Recolonisation unlikely.

Category:
EN: B1ab(iii,iv,v), C2a(i).

*EN

Leucorrhinia caudalis (Charpentier, 1840)

Population:
Breeding population in SK, where EN: D. Only one site, small size (expected much less than the limit for EN), no information on trends or fluctuations.
Population also in PL, where DD. Size of population only tens of individuals.
Old records but expected to still occur in UA (DD).
Elsewhere no data.
Large fluctuations likely to occur (based on other species of the genus).
European population stable (Kalkman et al., 2010).

Threats:
Not serious, according to the inhabited habitats (fish ponds). Intensification of fish farming and mismanagement of water regime.

Criteria:
A –
B qualifies for CR (B1ac(iv)+2ac(iv) – EOO less than 100 km^2 and AOO less than 100 km^2 + severely fragmented + indication of extreme fluctuations)
C –
D qualifies for EN (D – on both sites just tens of individuals but likely to exceed 50)
E –

Possibility of recolonisation:
Populations in PL, HU, AT, D with number of sites in close vicinity. Good flier. Recolonisation seems likely, SK population probably even founded in 2003/2004 in a colonising wave. Therefore downgrading one step to *EN.

Category:
*EN: B1ac(iv)+2ac(iv).

DD

Chalcolestes parvidens (Artobolevsky, 1929)
syn.: *Lestes parvidens*
HU: LC, RO: VU
Not enough information on its distribution, and rate and impacts of cross-breeding with *L. viridis*.
Trend in Europe unknown (Kalkman et al., 2010).

Sympecma paedisca (Brauer, 1877)
PL: DD. SK: only accidental data, no proof of a breeding population.
Category defined by PL list. Not enough data on its distribution and status of its population.
Trend in Europe decreasing (Kalkman et al., 2010).

Coenagrion pulchellum (Vander Linden, 1825)
Occurs in all countries but Serbia. SK: DD (nearly missing in the Carpathians despite of appropriate habitats), CZ: NT, PL: LC, UA: *NT, HU: LC, RO: DD (widespread, but trend possibly negative).
Large variation in its ranking between individual states. Category defined by SK and RO lists, since these countries constitute major part of the range. More research needs to focus on its ecology, distribution and possible hybridisation with *C. puella*.
Trend in Europe stable (Kalkman et al., 2010).

Coenagrion scitulum (Rambur, 1842)
CZ: VU, PL: NE, HU: LC, RO: VU. SK, RS and UA missing.
Large variation in its ranking between individual states. Requires more data about its distribution, population ecology (trends, impact of climate change) and

possible hybridisation with *C. puella*.
Trend in Europe stable (Kalkman et al., 2010).

Aeshna viridis (Eversman, 1836)
Breeding population only in HU, where NT. Old data from UA, where proposed DD. No data from other countries, although in SK enough appropriate habitats in close vicinity to HU sites.
More research on its ecology and distribution needed. Possibility of recolonisation needs to be examined – good flier but not enough nearby sources (only in HU) and retreat of population towards N and E in PL.
Trend in Europe decreasing (Kalkman et al., 2010).

Brachytron pratense (Müller, 1764)
SK: *EN, CZ: NT, PL: DD, UA: DD, HU: LC, RO: VU. RS missing.
Large variation in its ranking between individual states. Requires more data about its distribution and population ecology (trends, impact of climate change).
Trend in Europe stable (Kalkman et al., 2010).

Cordulegaster boltonii (Donovan, 1807)
Breeding population in PL: DD. Erratic or questionable data from CZ, RO and RS.
Needs more research to clarify its range. CZ and RS: Possibly confused with *C. heros* in the past (similarly elsewhere)?
Trend in Europe stable (Kalkman et al., 2010).

Epitheca bimaculata (Charpentier, 1825)
Widespread, occurs in all countries but RS. SK: CR, CZ: EN, PL: DD, UA: *EN, HU: LC, RO: CR.
Mostly rated as facing high risk of extinction (except HU, where LC). Could be overlooked? Needs more research on its distribution and ecology to decide.
Trend in Europe stable (Kalkman et al., 2010).

Somatochlora flavomaculata (Vander Linden, 1825)
Widespread, occurs in all countries but SK (only one erratic find). CZ: *EN, PL: DD, UA: LC, HU: LC, RO: NT (trend possibly negative), RS: DD.
Rated diversely, from LC (UA, HU) through to *EN (CZ). More research (distribution, ecology) needed to decide.
Trend in Europe stable (Kalkman et al., 2010).

Somatochlora meridionalis (Nielsen, 1935)
CZ: NA, RO: DD (widespread, with one hybrid population), RS: DD. SK – few pure *meridionalis*, mainly hybrids with *S. metallica*.
Occurs from south (RS, RO) up to north (CZ, SK), but missing (overlooked?) in the centre (HU, UA). More research on the area, population and hybridisation needed.
Trend in Europe unknown (Kalkman et al., 2010).

NE

Species, where it is not possible to prove their occurrence in the Carpathians (no valid specimens to review).

Aeshna caerulea (Ström, 1783)
Cordulegaster picta (Selys, 1854)

NA

Species proven to be present in the Carpathians, nonetheless, to the best knowledge, no stable autochthonous populations existing.

Coenagrion armatum (Charpentier, 1840)
Coenagrion lunulatum (Charpentier, 1840)
Anax ephippiger (Burmeister, 1839), syn. *Hemianax ephippiger*
Cordulegaster insignis (Schneider, 1845)

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Manci C.O. - Dragonflies (Insecta: Odonata) in Timis county, a general view of distribution.

Manci C.O. & Bazga D. - Contribution to the

knowledge of Transylvanian dragonfly fauna (Insecta: Odonata) and a new species for Romanian fauna.

Manci C.O. - Contribution to the knowledge of dragonfly fauna (Insecta: Odonata) from the Hateg Country Dinosaurus Geopark (Transylvania, Romania).

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Table 1: Overview of the status of dragonflies of the Carpathians

WOL name: genus	species	FE name: genus	species	Carpathians	criteria	EUR	EU 27	HD	Bern
Calopteryx Leach, 1815	splendens (Harris, 1782)	Calopteryx Leach, 1815	splendens (Harris, 1782)	LC		LC	LC		
	virgo (Linnaeus, 1758)		virgo (Linnaeus, 1758)	LC		LC	LC		
Chalcolestes Kennedy, 1920	parvidens (Artobolevsky, 1929)	Lestes Leach, 1815	parvidens Artobolevsky, 1929	DD		LC	DD		
	viridis (Vander Linden, 1825)		viridis (Vander Linden, 1825)	LC		LC	LC		
Lestes Leach, 1815	barbarus (Fabricius, 1798)		barbarus (Fabricius, 1798)	LC		LC	LC		
	dryas Kirby, 1890		dryas Kirby, 1890	LC		LC	LC		
	macrostigma (Eversmann, 1836)		macrostigma (Eversmann, 1836)	VU	A1c	VU	EN		
	sponsa (Hansemann, 1823)		sponsa (Hansemann, 1823)	LC		LC	LC		
	virens (Charpentier, 1825)		virens (Charpentier, 1825)	NT		LC	LC		
Sympecma Burmeister, 1839	fusca (Vander Linden, 1820)	Sympecma Burmeister, 1839	fusca (Vander Linden, 1820)	LC		LC	LC		
	paedisca (Brauer, 1877)		paedisca (Brauer, 1882)	DD		LC	LC	4	2
Platycnemis Burmeister, 1839	pennipes (Pallas, 1771)	Platycnemis Burmeister, 1839	pennipes (Pallas, 1771)	LC		LC	LC		
Coenagrion Kirby, 1890	armatum (Charpentier, 1840)	Coenagrion Kirby, 1890	armatum (Charpentier, 1840)	NA		LC	NT		
	hastulatum (Charpentier, 1825)		hastulatum (Charpentier, 1825)	*NT		LC	LC		
	lunulatum (Charpentier, 1840)		lunulatum (Charpentier, 1840)	NA		LC	LC		
	ornatum (Selys, 1850)		ornatum (Selys, 1850)	*NT		NT	NT	2	
	puella (Linnaeus, 1758)		puella (Linnaeus, 1758)	LC		LC	LC		
	pulchellum (Vander Linden, 1825)		pulchellum (Vander Linden, 1825)	DD		LC	LC		
	scitulum (Rambur, 1842)		scitulum (Rambur, 1842)	DD		LC	LC		
Enallagma Charpentier, 1840	cyathigerum (Charpentier, 1840)	Enallagma Charpentier, 1840	cyathigerum (Charpentier, 1840)	LC		LC	LC		
Erythromma Charpentier, 1840	lindenii (Selys, 1840)	Cercion Navás, 1907	lindenii (Selys, 1840)	LC		LC	LC		
	najas (Hansemann, 1823)	Erythromma Charpentier, 1840	najas (Hansemann, 1823)	LC		LC	LC		
	viridulum Charpentier, 1840		viridulum (Charpentier, 1840)	LC		LC	LC		
Ischnura Charpentier, 1840	elegans (Vander Linden, 1820)	Ischnura Charpentier, 1840	elegans (Vander Linden, 1820)	LC		LC	LC		
	pumilio (Charpentier, 1825)		pumilio (Charpentier, 1825)	LC		LC	LC		
Nehalennia Selys, 1850	speciosa (Charpentier, 1840)	Nehalennia Selys, 1850	speciosa (Charpentier, 1840)	EN	B1ab(iii)+2ab(iii)	NT	VU		
Pyrrhosoma Charpentier, 1840	nymphula (Sulzer, 1776)	Pyrrhosoma Charpentier, 1840	nymphula (Sulzer, 1776)	LC		LC	LC		
Aeshna Fabricius, 1775	affinis Vander Linden, 1820	Aeshna Fabricius, 1775	affinis Vander Linden, 1820	LC		LC	LC		
	caerulea (Ström, 1783)		caerulea (Ström, 1783)	NE		LC	LC		
	cyanea (Müller, 1764)		cyanea (Müller, 1764)	LC		LC	LC		
	grandis (Linnaeus, 1758)		grandis (Linnaeus, 1758)	NT		LC	LC		
	juncea (Linnaeus, 1758)		juncea (Linnaeus, 1758)	LC		LC	LC		

WOL name: genus	species	FE name: genus	species	Carpathians	criteria	EUR	EU 27	HD	Bern
	mixta Latreille, 1805		mixta Latreille, 1805	LC		LC	LC		
	subarctica Walker, 1908		subarctica Walker, 1908	EN	B1ab(iii,iv,v), C2a(i)	LC	LC		
	viridis Eversman, 1836		viridis Eversman, 1836	DD		NT	NT	4	2
Anaciaeschna Selys, 1878	isoceles (Müller, 1767)		isoceles (Müller, 1767)	LC		LC	LC		
Anax Leach, 1815	ephippiger (Burmeister, 1839)	Hemianax Selys, 1839	ephippiger (Burmeister, 1839)	NA		LC	LC		
	imperator Leach, 1815	Anax Leach, 1815	imperator Leach, 1815	LC		LC	LC		
	parthenope (Selys, 1839)		parthenope (Selys, 1839)	LC		LC	LC		
Brachytron Evans, 1845	pratense (Müller, 1764)	Brachytron Evans, 1845	pratense (Müller, 1764)	DD		LC	LC		
Gomphus Leach, 1815	vulgatissimus (Linnaeus, 1758)	Gomphus Leach, 1815	vulgatissimus (Linnaeus, 1758)	LC		LC	LC		
Onychogomphus Selys, 1854	forcipatus (Linnaeus, 1758)	Onychogomphus Selys, 1854	forcipatus (Linnaeus, 1758)	LC		LC	LC		
Ophiogomphus Selys, 1854	cecilia (Geoffroy in Fourcroy, 1785)	Ophiogomphus Selys, 1854	cecilia (Fourcroy, 1785)	LC		LC	LC	2, 4	2
Stylurus Needham, 1897	flavipes (Charpentier, 1825)	Gomphus Leach, 1815	flavipes (Charpentier, 1825)	NT		LC	LC	4	2
Cordulegaster Leach, 1815	bidentata Selys, 1843	Cordulegaster Leach, 1815	bidentata Selys, 1843	LC		NT	NT		
	boltonii (Donovan, 1807)		boltonii (Donovan, 1807)	DD		LC	LC		
	heros Theischinger, 1979		heros Theischinger, 1979	NT		NT	NT	2, 4	
	insignis Schneider, 1845		insignis Schneider, 1845	NA		EN	EN		
	picta Selys, 1854		picta Selys, 1854	NE		VU	VU		
Cordulia Leach, 1915	aenea (Linnaeus, 1758)	Cordulia Leach, 1915	aenea (Linnaeus, 1758)	LC		LC	LC		
Epitheca Burmeister, 1839	bimaculata (Charpentier, 1825)	Epitheca Burmeister, 1839	bimaculata (Charpentier, 1825)	DD		LC	LC		
Somatochlora Selys, 1871	alpestris (Selys, 1840)	Somatochlora Selys, 1871	alpestris (Selys, 1840)	VU	C2a(i), D2	LC	LC		
	arctica (Zetterstedt, 1840)		arctica (Zetterstedt, 1840)	EN	B1ab(iii,iv,v), C2a(i)	LC	LC		
	flavomaculata (Vander Linden, 1825)		flavomaculata (Vander Linden, 1825)	DD		LC	LC		
	meridionalis Nielsen, 1935		meridionalis Nielsen, 1935	DD		LC	LC		
	metallica (Vander Linden, 1825)		metallica (Vander Linden, 1825)	LC		LC	LC		
Crocothemis Brauer, 1868	erythraea (Brullé, 1832)	Crocothemis Brauer, 1868	erythraea (Brullé, 1832)	LC		LC	LC		
Leucorrhinia Brittinger, 1850	albifrons (Burmeister, 1839)	Leucorrhinia Brittinger, 1850	albifrons (Burmeister, 1839)	*VU	B2ac(iv), C2b	LC	NT	4	2
	caudalis (Charpentier, 1840)		caudalis (Charpentier, 1840)	*EN	B1ac(iv)+2ac(iv)	LC	NT	4	2
	dubia (Vander Linden, 1825)		dubia (Vander Linden, 1825)	*NT		LC	LC		
	pectoralis (Charpentier, 1825)		pectoralis (Charpentier, 1825)	*NT		LC	LC	2, 4	2
	rubicunda (Linnaeus, 1758)		rubicunda (Linnaeus, 1758)	*VU	B2ac(iv), C2b	LC	LC		
Libellula Linnaeus, 1758	depressa Linnaeus, 1758	Libellula Linnaeus, 1758	depressa Linnaeus, 1758	LC		LC	LC		
	fulva Müller, 1764		fulva Müller, 1764	NT		LC	LC		
	quadrimaculata Linnaeus, 1758		quadrimaculata Linnaeus, 1758	LC		LC	LC		
Orthetrum Newman, 1833	albistylum (Selys, 1848)	Orthetrum Newman, 1833	albistylum (Selys, 1848)	LC		LC	LC		
	brunneum (Fonscolombe, 1837)		brunneum (Fonscolombe, 1837)	LC		LC	LC		
	cancellatum (Linnaeus, 1758)		cancellatum (Linnaeus, 1758)	LC		LC	LC		
	coerulescens (Fabricius, 1798)		coerulescens (Fabricius, 1798)	LC		LC	LC		
Sympetrum Newman, 1833	danae (Sulzer, 1776)	Sympetrum Newman, 1833	danae (Sulzer, 1776)	LC		LC	LC		
	depressiusculum (Selys, 1841)		depressiusculum (Selys, 1841)	VU	B2ab(i, ii, iii, iv, v), D2	VU	VU		
	flaveolum (Linnaeus, 1758)		flaveolum (Linnaeus, 1758)	LC		LC	LC		
	fonscolombii (Selys, 1840)		fonscolombii (Selys, 1840)	LC		LC	LC		
	meridionale (Selys, 1841)		meridionale (Selys, 1841)	LC		LC	LC		
	pedemontanum (Müller, 1766)		pedemontanum (Allioni, 1766)	NT		LC	LC		
	sanguineum (Müller, 1764)		sanguineum (Müller, 1764)	LC		LC	LC		
	striolatum (Charpentier, 1840)		striolatum (Charpentier, 1840)	LC		LC	LC		
	vulgatum (Linnaeus, 1758)		vulgatum (Linnaeus, 1758)	LC		LC	LC		

RED LIST OF GRASSHOPPERS, BUSH-CRICKETS AND CRICKETS (ORTHOPTERA) OF THE CARPATHIAN MOUNTAINS

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Introduction

Orthoptera are among the most important bio-indicators of the status of integrity of natural habitats, especially for habitats with small plot sizes. Therefore, Orthoptera assemblages provide valuable information on habitat conditions and status of sites (Marini *et al.* 2009).
Global assessments of the conservation status of ca. 1000 European species of grasshoppers, crickets and bush-crickets for the IUCN Red List of Threatened Species™ started in 2011. The Red List status of 60 species has been published in 2012. Altogether, the global Red List status of 236 Orthoptera species has been assessed (IUCN 2013), 14 of which occur in the Carpathians (*Chorthippus acroleucus* VU, *Gampsocleis glabra* LC, *Isophya harzi* VU, *Metrioptera domogledi* VU, *Miramella irena* VU, *Odontopodisma nontana* VU, *Odontopodisma rubripes* VU, *Onconotus servillei* VU, *Poecilimon affinis* LC, *Poecilimon ampliatus* LC, *Saga pedo* VU, *Stenobothrus eurasius* VU, *Uvarovitettix transylvanicus* VU and *Zubovskia banatica* VU).
Red Lists of Orthoptera have been published in several Carpathian countries (however, based upon different criteria): Poland (Liana 1992, Liana 2002, Głowaciński & Nowacki 2004), former Czechoslovakia (Gulička 1992), Hungary (Nagy 1999), Slovakia (Krištín 2001), Czech Republic (Holuša & Kočárek 2005), Ukraine (Akimov 2009, Mateleshko & Potish 2011). A European Red List is not available yet and there is only one Carpathian Red List prepared ten years ago, based on unknown criteria, which includes five Orthoptera species (Witkowski *et al.* 2003).

Assessment Method

For processing the existing data on grasshoppers, crickets and bush-crickets in the Carpathian region of Slovakia, Czech Republic, Poland, Ukraine and Romania the following three steps were used:

1. Documentation on the Orthoptera fauna in the Carpathian region: Data was collected from the literature, from sources given by BioREGIO project partners in particular countries (see data contributors above) and own published and unpublished data (see literature section, unpublished records only by Krištín A. & Iorgu I. Ş.).
2. Data was entered in the online database platform of the project BioREGIO Carpathians as well as into a Microsoft Excel database.
3. All 142 Orthoptera species present in the Carpathian orographic units (excluding Serbia due to missing data) were evaluated according to the IUCN Red List criteria (IUCN 2001). Only one species (not native and introduced, *Meconema meridionale*) could not be assessed and was included in the category "Not Applicable" (NA). The other 141 species were classified to the categories Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC) and Data deficient (DD). Altogether 80 out of 141 species were not listed in the Bioregio database due to technical reasons (filling the occurrence, locations, habitats, threats in all orographic units in very common and abundant species), but they fulfil the general criteria for the category LC. Red List assessments from particular countries were also considered, based on the proposals of project partners and considering the extinction risk in surrounding Carpathian countries or adjacent Non-Carpathian territories. No assessment was done for the small part of the Carpathians located in Serbia, due to the absence of a partner.

Our purpose was to collect and process all existing data on Orthoptera species from six Carpathian countries (Czech Republic, Hungary, Poland, Romania, Slovakia, and Ukraine) and enter them into a database developed by the State Nature Conservancy of the Slovak Republic in order to assess the Red List status.

Results (Summary)

Altogether 142 Orthoptera species (ca 10.3% of the 1382 European species) were recorded in the Carpathian Mountains, in six Carpathian countries (CZ, SK, PL, UA, HU, RO; Table 1). The number of species ranged from 55 (Poland) to 133 (Romania) taxa, following the temperature gradient along this region and illustrating the strong impact on thermophilous insects as well as the proportional size of Carpathians in the particular countries. In these countries, the number of species listed in national Red Lists ranged from 12 (Poland, one threatened species) to 33 (Romania, 20 threatened species) and 37 species (Slovakia, 13 threatened species).
Altogether, 61 of the 141 assessed species were included in Carpathian Red List, but only 20 of them are listed as threatened. Ten species were assessed as EN (*Isophya harzi*, *Isophya ciucasi*, *Isophya nagyi*, *Saga pedo*, *Gampsocleis glabra*, *Metrioptera domogledi*, *Zubovskia banatica*, *Chorthippus acroleucus*, *Paracaloptenus caloptenoides*, *Podismopsis transsylvanica*) and ten as VU (*Isophya costata*, *I. sicula*, *I. dochia*, *Poecilimon intermedius*, *Onconotus servillei*, *Uvarovitettix transsylvanicus*, *Miramella irena*, *Odontopodisma decipiens*, *Odontopodisma montana*, *Stenobothrus eurasius*, Table 1). Most of EN species are also included on the global IUCN Red List.
A total of 16 species was endemic to the Carpathians (11.3% of 142) and further six species sub-endemic (Table 1), meaning that they also occur at a few sites in the area surrounding the Carpathians.

Main threats

The major threats detected in most red-listed species are:

i) Habitat loss/degradation, abandonment of traditional management, of grass cutting and grazing and following succession leading to overgrowing by shrubs and trees (e.g. *Saga pedo*, *Gampsocleis glabra*, *Metrioptera domogledi*, *Paracaloptenus caloptenoides*, *Odontopodisma decipiens*, *Miramella irena*, *Stenobothrus eurasius*).
ii) Human settlement expansion, use of insecticides, overgrazing (e.g. *Isophya harzi*, *I. ciucasi*, *I. nagyi*, *I. sicula*, *I. dochia*, *Paracaloptenus caloptenoides*, *Saga pedo*, *Chorthippus acroleucus*, *Podismopsis transsylvanica*).
iii) Afforestation of non-forest habitats (e.g. *Saga pedo*, *Paracaloptenus caloptenoides*, *Stenobothrus eurasius*).
iv) Restricted range, low densities, limited dispersal with combination with above mentioned threats: (e.g. most of brachypterous species *Isophya harzi*, *I. ciucasi*, *I. nagyi*, *I. sicula*, *I. dochia*, *Poecilimon intermedius*, *Onconotus servillei*, *Gampsocleis glabra*, *Uvarovitettix transsylvanicus*, *Miramella irena*, *Zubovskia banatica*, *Chorthippus acroleucus*, *Podismopsis transsylvanica*).

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Table 1: Orthoptera in the Carpathians (Car) and their IUCN regional Red List categories (RL) and criteria (Crit) in particular Carpathian countries and for entire Carpathian region. (= present)*

Taxa	SK		CZ		HU		PL		UA		RO		Carpathians		Endemic, or Subendemic in Carpathians
	RL	Crit	RL	Crit	RL	Crit	RL	Crit	RL	Crit	RL	Crit	RL	Crit	
Ephippiger ephippiger (Fiebig, 1784)			*						*		*		*		
Conocephalus discolor Thunberg, 1815 / =fuscus (Fabricius, 1793)/			*						*		*		*		
Conocephalus dorsalis (Latreille, 1804)	LC		*				*		*		*		LC		
Conocephalus hastatus (Charpentier, 1825)											*		*		
Ruspolia nitidula (Scopoli, 1786)	LC								*		*		LC		
Meconema meridionale A. Costa, 1860			*										NA		
Meconema thalassinum (De Geer, 1773)			*				*		*		*		*		
Barbitistes constrictus Brunner von Wattenwyl, 1878			*				*		*		*		*		
Barbitistes ocskayi (Charpentier, 1850)											*		*		
Barbitistes serricauda (Fabricius, 1798)	NT		*		NT						*		NT		
Isophya beybienkoi Maran, 1958	DD												DD		E
Isophya camptoxypha Fieber, 1853					*		*		*		*		*		E
Isophya costata Brunner von Wattenwyl, 1878					VU	B1 a+c					*		VU	B1a, b(iv, v)	
Isophya harzi Kis, 1960											EN	B2a+b iii iv v	EN	B2a+b iii iv v	E
Isophya kraussii kraussii Brunner von Wattenwyl, 1878			*		*		DD		*		*		*		
Isophya kraussii moldavica Iorgu & Heller, 2013											*		*		
Isophya modestior Brunner von Wattenwyl, 1882					*						*		*		
Isophya pienensis Maran, 1954	NT		*				NT		*		*		LC		E
Isophya ciucasi Iorgu & Iorgu, 2010											EN	B1a+b ii iii	EN	B1a+b ii iii	E
Isophya sicula Orci, Szovenyi & Nagy, 2010											VU	B2a+b iii	VU	B2a+b iii	E
Isophya dochia Iorgu, 2012											VU	B2a+b iii	VU	B2a+b iii	E
Isophya nagyi Szovenyi, Puskas & Orci, 2012											EN	B2a+b iii	EN	B2a+b iii	E
Isophya posthumoidalis Bazyluk, 1971	DD						DD		*		LC		LC		E
Isophya speciosa (Frivaldszky, 1867)											LC		LC		
Isophya stysi Cejchan, 1957	NT				NT		DD		NT		*		LC		E
Isophya modesta (Frivaldszky, 1867)	VU	B1 a+c			VU	B1 a+c					*		DD		SE

Taxa	SK RL	SK Crit	CZ RL	CZ Crit	HU RL	HU Crit	PL RL	PL Crit	UA RL	UA Crit	RO RL	RO Crit	Carpathians RL	Carpathians Crit	Endemic, or Subendemic in Carpathians
Isophya rectipennis Brunner von Wattenwyl, 1878											LC		LC		
Isophya zubowskii Bei-Bienko, 1954											LC		LC		SE
Leptophyes albovittata (Kollar, 1833)			*		*		*		*		*		*		
Leptophyes discoidalis (Frivaldszky, 1867)	NT				NT				NT		*		DD		SE
Leptophyes laticauda (Frivaldszky, 1867)											DD		DD		
Leptophyes punctatissima (Bosc, 1792)					*								*		
Phaneroptera falcata (Poda, 1761)			*		*		*		*		*		*		
Phaneroptera nana Fieber, 1853	DD				*				*		*		DD		
Poecilimon affinis (Frivaldszky, 1867)											NT		NT		
Poecilimon ampliatus Brunner von Wattenwyl, 1878											DD		DD		
Poecilimon brunneri (Frivaldszky, 1867)					*								DD		
Poecilimon fussii Brunner von Wattenwyl, 1878	CR	B1 a+c			VU	B1 a+c			DD		*		DD		
Poecilimon intermedius (Fieber, 1853)	EN	B1 a+c; D	VU	B1 a+c	VU	B1 a+c					DD		VU	B1a, b(ii,iii,iv, v)	
Poecilimon schmidtii (Fieber, 1853)	LC				LC				NT		*		LC		
Poecilimon thoracicus (Fieber, 1853)											NT		NT		
Polysarcus denticauda (Charpentier, 1825)	LC		CR	B1 a+b+c	*		DD		LC		*		LC		
Onconotus servillei Fischer de Waldheim, 1846											VU	B2a+b iii; D1	VU	B2a+b iii; D1	
Saga pedo (Pallas, 1771)	CR	B1 a+b+c	CR	B1 a+b+c	EN	B1 a+b+c					EN	B2a+b i ii iii; D	EN	B2a+b i ii iii; D	
Decticus verrucivorus (Linnaeus, 1758)	*		*		*		*		*		*		*		
Gampsocleis glabra (Herbst, 1786)											EN	B2a+b; D	EN	B2a+b; D	
Metrioptera (M.) bicolor (Philippi, 1830)	*		*		*		*		*		*		*		
Metrioptera (M.) brachyptera (Linnaeus, 1761)	*		*		*		*		*		*		*		
Metrioptera (Broughtonia) domogledi Brunner v. Wattenwyl, 1882											EN	B2a+b	EN	B2a+b; D	E
Metrioptera (M.) roeselii roeselii (Hagenbach, 1822)	*		*		*		*		*		*		*		
Pachytrachis gracilis (Brunner von Wattenwyl, 1861)	CR	B1 a+b+c			EN	B1 a+c			EN	B1 a+c	*		DD		
Pholidoptera aptera (Fabricius, 1793)	*		*		*		*				*		*		
Pholidoptera fallax (Fischer, 1853)	*		*		*						*		*		
Pholidoptera frivaldskyi (Herman, 1871)	EN	B1 a+c							DD		LC		DD		SE
Pholidoptera griseoaptera (De Geer, 1773)	*		*		*		*		*		*		*		
Pholidoptera littoralis similis (Brunner von Wattenwyl, 1861)											*		*		
Pholidoptera transsylvanica (Fischer, 1853)	NT				NT				NT		LC		LC		SE
Platycleis (P.) albopunctata (Goeze, 1778)											*		*		
Platycleis (Platycleis) albopunctata grisea (Fabricius, 1781)	*		*		*		*		*		*		*		
Platycleis (Montana) striata (Thunberg, 1815)											*		*		
Platycleis (Montana) montana (Kollar, 1833)	NT										NT		NT		
Platycleis (Tesselana) veyseli (Kocak, 1984)	*				*						*				
Pterolepis germanica (Herrich-Schäffer, 1840)	VU	B1 a+c			*						LC		DD		
Tettigonia cantans (Füssli, 1775)	*		*		*		*		*		*		*		
Tettigonia caudata (Charpentier, 1842)	NT		*		NT						*		*		
Tettigonia viridissima Linnaeus, 1758	*		*		*		*		*		*		*		
Acheta domesticus (Linnaeus, 1758)	*		*		*		*		*		*		*		
Eumodicogryllus bordigalensis (Latreille, 1804)	DD		*		*				*		*		*		
Gryllus campestris Linnaeus, 1758	*		*		*		*		*		*		*		
Melanogryllus desertus (Pallas, 1771)	*		*		*				*		*		*		

Taxa	SK RL	SK Crit	CZ RL	CZ Crit	HU RL	HU Crit	PL RL	PL Crit	UA RL	UA Crit	RO RL	RO Crit	Carpathians RL	Carpathians Crit	Endemic, or Subendemic in Carpathians
Modicogryllus frontalis (Fieber, 1844)	*		*		*				*		*		*		
Nemobius sylvestris (Bosc, 1792)	*		*										*		
Pteronemobius heydenii (Fischer, 1853)									*		*		*		
Oecanthus pellucens (Scopoli, 1763)	*		*		*				*		*		*		
Gryllotalpa gryllotalpa (Linnaeus, 1758)	*		*		*		*		*		*		*		
Myrmecophilus acervorum (Panzer, [1799])	*		*		*				*				*		
Tetrix bipunctata (Linnaeus, 1758)	*		*		*		*		*		*		*		
Tetrix ceperoi (Bolívar, 1887)			*										*		
Tetrix subulata (Linnaeus, 1758)	*		*		*		*		*		*		*		
Tetrix tenuicornis Sahlberg, 1893	*		*		*		*		*		*		*		
Tetrix tuerki (Krauss, 1876)	LC		CR	B1 a+b+c			NT		LC		LC		LC		
Tetrix undulata (Sowerby, 1806)	*		*		*		*		*		*		*		
Uvarovitettix transsylvanicus (Bazyluk et Kis, 1960)											VU	B2a,bII,IV	VU	B2a,bII,IV	E
Acrida ungarica (Herbst, 1786)									*		*		*		
Calliptamus italicus (Linnaeus, 1758)	*		NT		*				*		*		*		
Paracaloptenus caloptenoides (Brunner v. Wattenwyl, 1861)	CR	B1 a+b+c			CR	B1 a+b+c					EN	B2a+b; D	EN	B2a+b; D	
Miramella alpina (Kollar, 1833)	*				*		*				*		*		
Miramella ebneri ebneri (Galvagni, 1953)											*		*		
Miramella ebneri carpathica Cejchan, 1958	*						LC		NT		*		LC		
Miramella irena (Fruhstorfer, 1921)											VU	B2a+b iii; D1	VU	B2a+b iii; D1	E?
Odontopodisma acuminata Kis, 1962											*		*		
Odontopodisma carpathica Kis, 1962											*		*		
Odontopodisma decipiens Ramme, 1951	VU	B2 a+c											VU	B2a+c	
Odontopodisma montana Kis, 1962											VU	B1a+b iii iv v	VU	B1a+b iii iv v	
Odontopodisma rubripes Ramme, 1931	VU	B1 a+c							NT		NT		NT		SE
Pezotettix giornae (Rossi, 1794)	VU	B1 a+c			*						*		LC		
Podisma pedestris (Linnaeus, 1758)	*		RE		*		LC				*		LC		
Pseudopodisma fieberi (Scudder, 1897)											*				
Pseudopodisma nagyi Galvagni & Fontana, 1996	LC				LC						*		LC		
Pseudopodisma transilvanica Galvagni & Fontana, 1993	*								DD		*		LC		
Zubovskya banatica Kis, 1965											EN	B2a+b iii iv v	EN	B2a+b iii iv v	E
Arcyptera fusca (Pallas, 1773)	NT		RE		VU	B1 a+c					*		NT		
Chorthippus acroleucus (Müller, 1924)											EN	B2a+b iii iv v	EN	B2a+b iii iv v	E
Chorthippus albomarginatus (De Geer, 1773)	*		*		*		*				*		*		
Chorthippus apricarius (Linnaeus, 1758)	*		*		*		*		*		*		*		
Chorthippus biguttulus (Linnaeus, 1758)	*		*		*		*		*		*		*		
Chorthippus brunneus (Thunberg, 1815)	*		*		*		*		*		*		*		
Chorthippus dichrous (Eversmann, 1859)	DD		*		*				*		*		*		
Chorthippus dorsatus (Zetterstedt, 1821)	*		*		*		*		*		*		*		
Chorthippus mollis (Charpentier, 1825)	*		*		*		*		*		*		*		
Chorthippus montanus (Charpentier, 1825)	*		*		*		*		*		*		*		
Chorthippus oschei Helversen, 1985	*				*				*		*		*		
Chorthippus parallelus (Zetterstedt, 1821)	*		*		*		*		*		*		*		
Chorthippus pullus (Philippi, 1830)	NT		NT				DD		NT		*		NT		
Chorthippus tatrae (Harz, 1971)	*												*		
Chorthippus vagans (Eversmann, 1848)	*		*		*		*				*		*		

Taxa	SK		CZ		HU		PL		UA		RO		Carpathians		Endemic, or Subendemic in Carpathians
	RL	Crit	RL	Crit	RL	Crit	RL	Crit	RL	Crit	RL	Crit	RL	Crit	
Chrysochraon dispar (Germar, [1834])	*		*		*		*		*		*		*		
Dociostaurus brevicollis (Eversmann, 1848)	*				*				*		*		*		
Dociostaurus maroccanus (Thunberg, 1815)					*								*		
Euchorthippus declivus (Brisout de Barneville, 1849)	*		*		*				*		*		*		
Euchorthippus pulvinatus (Fischer de Waldheim, 1846)	*				*						*		*		
Euthystira brachyptera (Ocskay, 1826)	*		*		*		*		*		*		*		
Gomphocerippus rufus (Linnaeus, 1758)	*		*		*		*		*		*		*		
Myrmeleotettix maculatus (Thunberg, 1815)	*		*		*		*		*		*		*		
Omocestus haemorrhoidalis (Charpentier, 1825)	*		*		*		*		*		*		*		
Omocestus petraeus (Brisout de Barneville, 1856)					*								*		
Omocestus rufipes (Zetterstedt, 1821)	*		*		*		*		*		*		*		
Omocestus viridulus (Linnaeus, 1758)	*		*		*		*		*		*		*		
Podismopsis transsylvanica Ramme, 1951											EN	B2a+b iii	EN	B2a+b iii	E
Stauroderus scalaris (Fischer de Waldheim, 1846)	NT				*				*		*		*		
Stenobothrus crassipes (Charpentier, 1825)	*		*		*						*		*		
Stenobothrus eurasius Zubovskii, 1898	VU	B2 a+c			VU	B2 a+c					VU	B2a+c	VU	B2a+c	
Stenobothrus lineatus (Panzer, 1796)	*		*		*		*		*		*		*		
Stenobothrus nigromaculatus (Herrich-Schäffer, 1840)	*		*		*						*		*		
Stenobothrus rubicundulus Kruseman et Jeekel, 1967											*		*		
Stenobothrus stigmaticus (Rambur, 1838)	*		*		*		*		*		*		*		
Aiolopus strepens (Latreille, 1804)											*		*		
Aiolopus thalassinus (Fabricius, 1781)	LC				*		DD		*		*		LC		
Mecostethus parapleurus (Hagenbach, 1822)	NT		NT		*		DD		NT		*		LC		
Oedaleus decorus (Germar, 1826)	*				*								*		
Oedipoda caerulescens (Linnaeus, 1758)	*		*		*		*		*		*		*		
Bryodemella tuberculatum (Fabricius, 1775)											DD		DD		
Psophus stridulus (Linnaeus, 1758)	*		NT		NT		VU	B1, B2a+b iv+v	NT		*		LC		
Sphingonotus caerulans (Linnaeus, 1767)	NT		*		*						*		LC		
Stethophyma grossum (Linnaeus, 1758)	LC		NT		*		*		*		*		LC		
Total species	37		11		17		12		14		33		61		
RE			2												
CR	4		3		1										
EN	2				2				1		10		10		
VU	7		1		6		1				10		10		
NT	11		5		6		2		9		4		7		
LC	8				2		2		2		8		22		
DD	5						7		3		4		12		

Table 2: Detailed description of Red List criteria for Carpathian Orthoptera

Taxa	Criteria in detail for Carpathians
Meconema meridionale A. Costa, 1860	not native in Carpathians, known only from 2009 there
Barbitistes serricauda (Fabricius, 1798)	NT close to VU: B. 2. AOO: approx. 3000 km^2; (a) severely fragmented; (b) II. continuing decline in area / quality of habitat
Isophya costata Brunner von Wattenwyl, 1878	B. 1. EOO cca. 10 000-15 000 km^2; (a) severely fragmented; (b) continuing decline in area, quality of habitat (due to overgrazing), number of locations; number of mature individuals.
Isophya harzi Kis, 1960	B. 2. AOO cca. 150 km^2; (a) only one known location; (b) continuing decline in area, quality of habitat (due to overgrazing), number of subpopulations; number of mature individuals
Isophya ciucasi Iorgu & Iorgu, 2010	B. 1. EOO cca. 3000 km^2; (a) only two locations; (b) continuing decline in area of occupancy and area / quality of habitat (due to overgrazing)
Isophya sicula Orci, Szovenyi & Nagy, 2010	B. 2. AOO cca. 1000 km^2; (a) only two locations; (b) continuing decline in area / quality of habitat (due to overgrazing and human settlement expansion)
Isophya dochia Iorgu, 2012	B. 2. AOO cca. 1000 km2; (a) only three locations; (b) continuing decline in area / quality of habitat (due to overgrazing)
Isophya nagyi Szovenyi, Puskas & Orci, 2012	B. 2. AOO cca. 300 km^2; (a) only two locations; (b) continuing decline in area / quality of habitat (due to overgrazing)
Poecilimon affinis (Frivaldszky, 1867)	NT close to VU: B. 1. EOO: approx. 20 000 km^2; (a) only 25 locations; (b) II. continuing decline in area / quality of habitat (due to overgrazing).
Poecilimon intermedius (Fieber, 1853)	B. 1. EOO cca. 10 000 km^2; (a) severely fragmented; (b) continuing decline in area of occupancy, quality of habitat (due to overgrazing), number of locations; number of mature individuals.
Poecilimon thoracicus (Fieber, 1853)	NT close to VU: B. 1. EOO: approx. 10 000 km^2; (a) only 11 locations; (b) II. continuing decline in area / quality of habitat (due to overgrazing).
Onconotus servillei Fischer de Waldheim, 1846	B. 2. AOO cca. 1000 km^2; (a) only one location; (b) continuing decline in area / quality of habitat; D. 1. Population size: 500-800 individuals.
Saga pedo (Pallas, 1771)	B. 2. AOO cca. 300 km^2; (a) only five locations; (b) continuing decline in extent of occurrence, area of occupancy and area / quality of habitat; D. population size estimated to be less than 200 mature individuals
Gampsocleis glabra (Herbst, 1786)	B2. AOO: approx. 200 km^2; (a) only one location; (b) continuing decline in area of occupancy and number of mature individuals; D. Population size: approx. 150-200 mature individuals.
Metrioptera (Broughtonia) domogledi Brunner v. Wattenwyl, 1882	B2. AOO: approx. 200 km^2; (a) only one location; (b) continuing decline in area of occupancy and number of mature individuals. In Serbia 4 oro units (VU, Pavičevič D, in litt.)
Pachytrachis gracilis (Brunner von Wattenwyl, 1861)	NT close to VU: B. 1. EOO: approx. 25 000 km^2; (a) especially in the northern countries severely fragmented; (b) II. continuing decline in area / quality of habitat.
Platycleis (Montana) montana (Kollar, 1833)	NT close to VU: B. 2. AOO: approx. 2100 km^2; (a) only 4 locations; (b) II. continuing decline in area / quality of habitat (due to overgrazing and human settlement expansion).
Uvarovitettix transsylvanicus (Bazyluk et Kis, 1960)	B. 2. AOO: approx. 1800-2000 km^2; (a) only four locations; (b) continuing decline in (II) area of occupancy and (IV) number of locations
Paracaloptenus caloptenoides (Brunner v. Wattenwyl, 1861)	B. 2. AOO: approx. 380-450 km^2; (a) severely fragmented, only 11 locations; (b) continuing decline in area of occupancy, number of mature individuals; D. Population size: approx. 200-250 mature individuals.
Miramella irena (Fruhstorfer, 1921)	B. 2. AOO cca. 1000 km^2; (a) only one location; (b) continuing decline in area / quality of habitat; D. 1. Population size: 800-1000 mature individuals.
Odontopodisma decipiens Ramme, 1951	B. 2. AOO: approx. 800-1000 km^2; (a) only 8 locations; (c) extreme fluctuations in number of mature individuals
Odontopodisma montana Kis, 1962	B. 1. EOO cca. 15000 km^2; (a) only six locations; (b) continuing decline in: area and quality of habitat; number of locations; number of mature individuals
Odontopodisma rubripes Ramme, 1931	NT close to VU: B. 1. EOO: approx. 20 000 km^2; (a) severely fragmented; (b) continuing decline in area / quality of habitat.
Zubovskya banatica Kis, 1965	B. 2. AOO cca. 200 km^2; (a) only one location; (b) continuing decline in area, quality of habitat; number of subpopulations; number of mature individuals
Arcyptera fusca (Pallas, 1773)	NT close to VU: B. 2. AOO: approx. 2 000-3 000 km^2; (a) severely fragmented; (b) continuing decline in area / quality of habitat (aforestation, lost of pastures).
Chorthippus acroleucus (Müller, 1924)	B. 2. AOO cca. 150 km^2; (a) only one location; (b) continuing decline in area, quality of habitat (due to overgrazing), number of subpopulations; number of mature individuals
Chorthippus pullus (Philippi, 1830)	NT close to VU: B. 2. AOO: approx. 2 000-3 000 km^2; (a) severely fragmented; (b) continuing decline in area / quality of habitat.
Podismopsis transsylvanica Ramme, 1951	B. 2. AOO cca. 200 km^2; (a) only one location; should be: (b) continuing decline in area / quality of habitat (due to overgrazing)
Stenobothrus eurasius Zubovskii, 1898	B. 2. AOO: approx. 2000 km^2; (a) only 7 locations; (c) extreme fluctuations in number of mature individuals.

DRAFT RED LIST OF BUTTERFLIES (LEPIDOPTERA: PAPILIONOIDEA) OF THE CARPATHIAN MTS.

Compiled by Henrik Kalivoda

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Background

There are 483 butterfly species listed in the worldwide IUCN Red List, and majority of the species occurring in Europe and the Carpathian region are part of this list. The worldwide IUCN Red List was one of the key documents in development of the Carpathian Red List.
Another background document used was IUCN European Red List of Butterflies, published in 2010. All butterflies species threatened in Europe are in this document very well evaluated, however, without closer reference to individual countries or regions. Data are evaluated from EU and Pan-European perspective. Despite these shortcomings, the IUCN European Red List of Butterflies was an important source of information.
The major source of information was a database developed specifically for the BioREGIO Carpathians project purposes. Full and useful data were available from Slovakia, Hungary, Poland, Romania, and Ukraine and partially from Serbia. Data from other countries of the Carpathian region were insufficient.

Methods

A new classification of butterflies (Nieukerken *et al.* 2011) was used, where some families and superfamilies of butterflies have been changed. The family Satyridae was merged with family Nymphalidae and whole superfamily Hesperioidea was moved to superfamily Papilionoidea as family Hesperiidae.
In the overall assessment there was only a group of butterflies (Superfamily Papilionoidea) included. Data on the occurrence and distribution of other groups of Lepidoptera were insufficient.
There also is a problem in timeliness and spatial distribution in each country within the Carpathian region.

Results

Altogether, 231 butterfly and moth species were listed in the BioREGIO Carpathians project database. Only 114 butterfly species were evaluated due to incomplete data sets of moths in some countries. The level of knowledge of butterflies in particular Carpathian countries differs as well. In summary, the following numbers of butterfly species were listed under the categories RE?, CR, EN, and VU in the National Red lists: 3 (HU), 13 (UA), 0 (RS), 25 (RO), 16 (PL) and 51 species (SK) (See Table1). Species of dry rocky habitats, grasslands, pastures, peat bogs and fens dominate in the national red lists.
The list of threatened Butterflies in the Carpathians is in Table 2.

Table 1: Number of species recorded in Red List in the Carpathians in individual countries

Status of threat	Slovakia	Hungary	Poland	Romania	Serbia	Ukraine
RE?	8		6			
CR	8		1	3		1
EN	18	1	5	7		7
VU	17	2	4	15		5
NT	8	6	8	3	1	1
LC	2	46	13	1		1
DD	9		1	1	1	1

Major threats to butterflies in the Carpathians
The main threats to butterflies are degradation and loss of habitats, which causes loss of optimal conditions for existence. The main reason is the drastic decline in traditional farming, mainly on non-forest habitats - abandonment of traditional management. Grass cutting and grazing is on decline and it leads to succession and overgrowing by shrubs and trees. Also an afforestation of dry rocky habitats has very negative consequences.

Conservation of butterflies in the Carpathians
Protection of butterflies must be based on the protection of their habitats. It is necessary to stop the degradation of grassland and pasture habitats and provide management under traditional agriculture. It is also necessary to ensure the protection of fens and bogs, and to stabilise and protect the water regime. For dry rocky habitats is necessary to stop the succession and ensure a removal of pioneering shrubs and trees.

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Table 2: List of threatened Butterflies in Carpathians and their IUCN Red List categories and criteria

	IUCN RL category (Carpathians)	IUCN RL criteria (Carpathians)	Endemic to Carpathians	HD Annexes	Bern Convention Appendices
Lepidoptera					
Hesperiidae					
Carcharodus floccifera (Zeller, 1847)	EN	A.3.	N		
Carcharodus lavatherae (Esper, 1783)	EN	A.3.	N		
Spialia orbifer (Hübner, 1823)	VU	A.3.	N		
Papilionidae					
Parnassius apollo (Linnaeus, 1758)	EN	A.2.	N	+	II
Zerynthia polyxena (Denis & Schiffermüller, 1775)	EN	B.1.b.(ii).	N	+	II
Pieridae					
Pieris ergane (Geyer, 1828)	EN	B.1.b.(ii).	N		
Pieris mannii (Mayer, 1851)	EN	A.2.	N		
Leptidea morsei (Fenton, 1882)	VU	A.3.	N	+	
Colias chrysotheme (Esper, 1781)	EN	A.3.	N		
Colias myrmidone (Esper, 1781)	EN	A.3.	N	+	

	IUCN RL category (Carpathians)	IUCN RL criteria (Carpathians)	Endemic to Carpathians	HD Annexes	Bern Convention Appendices
Colias palaeno (Linnaeus, 1761)	EN	A.3.	N		
Colias phicomone (Esper, 1780)	RE		N		
Nymphalidae					
Nymphalis xanthomelas (Esper, 1781)	EN	A.3.	N		
Nymphalis vaualbum (Denis & Schiffermüller, 1775)	RE		N	+	
Neptis rivularis (Scopoli, 1763)	VU	A.3.	N		
Brenthis hecate (Denis & Schiffermüller, 1775)	VU	A.3.	N		
Boloria aquilonaris (Stichel, 1908)	EN	A.2.	N		
Boloria titania (Esper, 1793)	EN	B.1.b.(ii).	N		
Boloria pales (Denis & Schiffermüller, 1775)	VU	A.3.	N		
Boloria eunomia (Esper, 1799)	VU	B.2.a.+b.(i,ii,iii,iv).	N		
Melitaea telona Fruhstorfer, 1908	EN	B.2.a.	N		
Melitaea trivia (Denis & Schiffermüller, 1775)	EN	A.3.	N		
Melitaea phoebe (Denis & Schiffermüller, 1775)	VU	A.3.	N		
Euphydryas aurinia (Rottemburg, 1775)	EN	A.3.	N	+	II
Euphydryas maturna (Linnaeus, 1758)	EN	A.3.	N	+	II
Hipparchia statilinus (Hufnagel, 1766)	EN	A.3.	N		
Hipparchia fagi (Scopoli, 1763)	VU	A.3.	N		
Chazara briseis (Linnaeus, 1764)	EN	A.3.	N		
Erebia gorge (Hübner, 1804)	VU	A.3.	N		
Erebia manto (Denis & Schiffermüller, 1775)	VU	A.3.	N		
Erebia melas (Herbst, 1796)	VU	A.3.	N		
Erebia pharte (Hübner, 1804)	VU	A.3.	N		
Erebia pronoe (Esper, 1780)	EN	A.3.	N		
Erebia sudetica Staudinger, 1861	EN	A.3.	N	+	II
Coenonympha hero (Linnaeus, 1761)	EN	A.3.	N	+	II
Coenonympha rhodopensis Elwes, 1900	VU	A.3.	N		
Coenonympha tullia (Muller, 1764)	VU	A.3.	N		
Lasiommata petropolitana (Fabricius, 1787)	VU	A.3.	N		
Lopinga achine (Scopoli, 1763)	VU	A.3.	N	+	II
Lycaenidae					
Lycaena helle (Denis & Schiffermüller, 1775)	VU	A.3.	N	+	
Lycaena thersamon (Esper, 1784)	VU	A.3.	N		
Plebejus optilete (Knoch, 1781)	VU	A.3.	N		
Pseudophilotes vicrama (Hemming, 1929)	VU	A.3.	N		
Scolitantides orion (Pallas, 1771)	VU	A.3.	N		
Glaucopsyche alexis (Poda, 1761)	EN	A.3.	N		
Phengaris arion (Linnaeus, 1758)	EN	A.2.	N	+	II
Phengaris alcon (Denis & Schiffermüller, 1775)	VU	A.3.	N		
Phengaris nausithous (Bergstrasser, 1779)	VU	A.3.	N	+	II
Phengaris teleius (Bergstrasser, 1779)	VU	A.3.	N	+	II
Polyommatus amandus (Schneider, 1792)	EN	A.2.	N		
Polyommatus eroides (Frivaldszky, 1835)	EN	A.2.	N	+	
Polyommatus admetus (Esper, 1783)	VU	A.3.	N		
Polyommatus damon (Denis & Schiffermüller, 1775)	VU	A.3.	N		
Polyommatus dorylas (Denis & Schiffermüller, 1775)	VU	A.3.	N		

DRAFT CARPATHIAN RED LIST OF FISH AND LAMPREY SPECIES

Compiled by Ján Koščo

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Background

Global and European context

At the global scale, the best source of information on the conservation status of plants and animals is the IUCN Red List of Threatened Species (see www.iucnredlist.org).

We used assessments available on the European Red List website and data portal: http://www.iucnredlist.org/, http://ec.europa.eu/environment/nature/conservation/species/redlist and http://www.iucnredlist.org/europe.

Carpathian/national context

The waters of the Carpathians are mainly fast-flowing mountain rivers and streams with the bedrock bottom. River slope ranges between less than 10‰ to over 100‰. The occurrence of macrophytes is rather restricted, due in part to fast currents and considerable changes in water level. Such hydrological conditions determine fish composition, with the dominant share of reophilous species. Fish preferring a bedrock bottom are a characteristic group in the Carpathian region.

Executive summary

As part of this Red List assessment, 76 native species have been assessed, present in the seven states of the Carpathian Region.

Assessment methodology

The status of all species was assessed using the IUCN Red List Criteria, which are the world's most widely accepted system for measuring extinction risk. All assessments followed the Guidelines for Application of IUCN Red List Criteria at Regional Levels.

The extinction risk of a species can be assessed at global, regional or national level. One species can have a different category in the National Red List and a Regional Red List. An endemic species should have the same category at national and regional level, as it is not present in any other part of the Carpathian region.

Taxonomic scope / Habitats categorisation

Taxonomy largely follows Kottelat and Freyhof (2007).

Assessments and evaluation

All lamprey and fish species, occurring in the Carpathians, were evaluated.

Results

Threat status – See Table 1.

Major threats

Although pollution is one of the most widespread threats, impacting the highest number of species, it is not the most serious threat. Other significant threats such as water abstraction and the introduction of alien species are causing much more rapid population declines for some freshwater species.

The single most important threat to European freshwater fishes is the abstraction of water; from underground, or from the streams and rivers themselves.

Many Carpathian fishes are highly susceptible to the impact of introduced alien species. These may be predators or competitors.

Most freshwater fishes are very sensitive to alterations of their natural habitat. In addition, many require long distance migrations to fulfil their life cycle.

There are few rivers in the Carpathians that have not been impacted by dams for hydropower or irrigation purposes.

Conservation/conservation management

Carpathian countries are signatories to a number of important conventions aimed at conserving biodiversity that are particularly relevant to freshwater fishes, including the

1979 Bern Convention on the Conservation of European Wildlife and Natural Habitats, and most importantly, the 1992 Convention on Biological Diversity. All countries and regions also afford freshwater fishes some form of protective species legislation.
The EU's LIFE+ programme offers financial support for species and habitats conservation projects throughout the EU. In particular, LIFE+ supports the implementation of the Birds and Habitats Directives and the establishment of the Natura 2000 network. Projects involve a variety of actions including habitat restoration, site purchases, communication and awareness-raising, protected area infrastructure and conservation planning.

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Table 1: Overview of the status of Lamprey and Fish species of the Carpathians

Family/Taxon	SK	CZ	HU	PL	RO	UA	RS	Carp. RL
Petromyzontidae								
Eudontomyzon danfordii	NT		EN		EN	NT	CR	VU
Eudontomyzon mariae	VU		NT	VU	-		CR	VU
Eudontomyzon vladykovi	NE				CR		CR	NA
Lampetra planeri	EN	CR		VU				VU
Acipenseridae								
Acipenser nudiventris							EN	EN
Acipenser ruthenus	NT		NT			CR	EN	VU
Acipenser stellatus							EN	EN
Acipenser sturio							EN	EN
Acipenser oxyrinchus				RE				RE
Huso huso							CR	CR
Anguillidae								
Anguilla anguilla	NE	NA	VU	NE		CR	EN	NE
Clupeidae								
Alosa caspia							DD	DD
Alosa immaculata							VU	VU
Cyprinidae								
Abramis brama	LC	LC	LC	LC		NT	LC	LC
Alburnoides bipunctatus	LC	VU	LC	EN		LC	LC	NT
Alburnus alburnus	LC	LC	LC	LC			LC	LC
Ballerus ballerus	NT	VU	LC			DD	LC	NT
Ballerus sapa	NT		LC			NT	LC	NT
Barbus barbus	LC	NT	LC	VU		NT	LC	NT
Barbus carpathicus	LC		NT	NT		NT		NT
Blicca bjoerkna	LC	LC	LC	LC		DD	LC	LC
Carassius carassius	VU	CR	VU	NT		EN	EN	VU
Cyprinus carpio wild form	NE			-			VU	EN
Cyprinus carpio culture form	LC	NA	LC					LC
Gobio carpathicus	NT		NT			EN		NT
Gobio obtusirostris		LC						LC
Gobio gobio	LC	LC	LC	LC			LC	LC
Chondrostoma nasus	NT	VU	LC	EN		LC	LC	NT
Leucaspius delineatus	EN	CR	NT	LC		LC		VU
Leuciscus aspius	LC	LC	LC	NT		NT	LC	LC
Leuciscus idus	NT	NT	LC	LC			LC	LC
Leuciscus leuciscus	NT	LC	LC	NT	CR		LC	NT
Pelecus cultratus	EN		NT			EN	LC	VU
Phoxinus phoxinus	LC	NT	VU	NT			DD	NT
Rhodeus amarus	LC	EN	LC			LC		LC
Romanogobio albipinnatus	NT	NT	LC	VU		VU	DD	NT
Romanogobio kesslerii	EN	CR	NT	NT		VU	DD	VU
Romanogobio uranoscopus	EN		EN		VU		DD	EN
Rutilus rutilus	LC	LC	LC	LC			LC	LC
Rutilus virgo	VU		EN			VU		VU
Scardinius erythrophthalmus	LC	LC	LC	LC			LC	LC
Squalius cephalus	LC	LC	LC	LC			LC	LC
Telestes souffia					VU	NT		VU
Tinca tinca	NT	LC	LC	LC			CR	NT
Vimba vimba	NT	VU	LC	CR		NT	LC	NT
Cobitidae								
Cobitis elongatoides	LC	NT	LC					NT
Cobitis elongata							CR	NE
Cobitis taenia				DD		NT	LC	NE
Misgurnus fossilis	NT	EN	NT				CR	NT
Sabanejewia balcanica	NT	VU	NT	VU		NT	-	NT
Balitoridae								
Barbatula barbatula	LC		LC	LC			LC	LC
Siluridae								
Silurus glanis	LC	LC	LC	LC		LC	LC	LC
Esocidae								
Esox lucius	LC	LC	LC	LC			LC	LC
Umbridae								
Umbra krameri	EN		VU			NT	EN	EN
Salmonidae								
Hucho hucho	EN	EW	EN	NA	CR	EN	-	EN
Salmo trutta	LC	NT	LC	NE		NT	-	LC
Salmo salar				RE				RE
Thymallus thymallus	NT	VU		NE	VU	VU	-	VU
Lotidae								
Lota lota	LC	NT	LC	VU		NT	LC	NT
Cottidae								
Cottus gobio	NT	VU	LC	NT			EN	VU
Cottus poecilopus	LC	VU		VU	VU	NT		NT

Family/Taxon	SK	CZ	HU	PL	RO	UA	RS	Carp. RL
Gasterosteidae								
Pungitius platygaster							DD	DD
Percidae								
Gymnocephalus baloni	VU		LC			DD	CR	NT
Gymnocephalus cernuus	NT	LC	NT	LC			LC	NT
Gymnocephalus schraetser	VU		EN			NT	LC	VU
Perca fluviatilis	LC	LC	LC	LC			LC	LC
Romanichthys valsanicola					CR			CR
Sander lucioperca	LC	LC	LC	LC			LC	LC
Sander volgensis	VU		NT			DD	LC	NT
Zingel streber	VU		VU			VU	CR	VU
Zingel zingel	VU		VU			NT	EN	VU
Gobiidae								
Neogobius fluviatilis							LC	LC
Neogobius gymnotrachelus							DD	LC
Neogobius kessleri							LC	LC
Neogobius melanostomus							LC	LC
Proterorhinus semilunaris			LC				LC	LC

Family/Taxon	IUCN category	IUCN criteria	HD annexes	Bern Convention appendices	Bonn Convention annexes
Petromyzontidae					
Eudontomyzon danfordii	LC		HD2		
Eudontomyzon mariae	LC		HD2	Bern3	
Eudontomyzon vladykovi	LC		HD2	Bern3	
Lampetra planeri	LC		HD2	Bern3	
Acipenseridae					
Acipenser nudiventris	CR	A2cd	HD5		Bonn2
Acipenser ruthenus	VU	A2cde	HD5	Bern3	Bonn2
Acipenser stellatus	CR	A2cde	HD5	Bern3	Bonn2
Acipenser sturio	CR	A2cde;B2ab(ii,iii,v)	HD2.HD4	Bern2	Bonn1,2
Acipenser oxyrinchus	NE		HD5		
Huso huso	CR	A2bcd	HD5	Bern2,3	Bonn2
Anguillidae					
Anguilla anguilla	NE				
Clupeidae					
Alosa caspia	LC		HD2,5		
Alosa immaculata	VU	B2ab(v)	HD2,5	Bern3	
Cyprinidae					
Abramis brama	LC				
Alburnoides bipunctatus	LC			Bern3	
Alburnus alburnus	LC				
Ballerus ballerus	LC			Bern3	
Ballerus sapa	LC			Bern3	
Barbus barbus	LC		HD5		

	IUCN category	IUCN criteria	HD annexes	Bern Convention appendices	Bonn Convention annexes
Barbus carpathicus	LC		HD5		
Blicca bjoerkna	LC				
Carassius carassius	LC				
Cyprinus carpio wild form	VU	A2ce			
Cyprinus carpio culture form					
Gobio carpathicus	LC				
Gobio obtusirostris	LC				
Gobio gobio	LC				
Chondrostoma nasus	LC			Bern3	
Leucaspius delineatus	LC			Bern3	
Leuciscus aspius	LC		HD2,5	Bern3	
Leuciscus idus	LC				
Leuciscus leuciscus	LC				
Pelecus cultratus	LC		HD2,5	Bern3	
Phoxinus phoxinus	LC				
Rhodeus amarus	LC		HD2	Bern3	
Romanogobio albipinnatus	LC		HD2	Bern3	
Romanogobio kesslerii	LC		HD2	Bern3	
Romanogobio uranoscopus	LC		HD2	Bern3	
Rutilus rutilus	LC				
Rutilus virgo	LC		HD2,5	Bern3	
Scardinius erythrophthalmus	LC				
Squalius cephalus	LC				
Telestes souffia	LC		HD2	Bern3	
Tinca tinca	LC				
Vimba vimba	LC			Bern3	
Cobitidae					
Cobitis elongatoides	LC		HD2	Bern3	
Cobitis elongata	LC		HD2	Bern3	
Cobitis taenia	LC		HD2	Bern3	
Misgurnus fossilis	LC		HD2	Bern3	
Sabanejewia balcanica	LC		HD2	Bern3	
Balitoridae					
Barbatula barbatula	LC				
Siluridae					
Silurus glanis	LC			Bern3	
Esocidae					
Esox lucius	LC				
Umbridae					
Umbra krameri	VU	A2c	HD2	Bern2	
Salmonidae					
Hucho hucho	EN	B2ab(ii,iii)	HD2,5	Bern3	
Salmo trutta	LC				
Salmo salar	NE		HD2,5	Bern3	
Thymallus thymallus	LC		HD5	Bern3	
Lotidae					
Lota lota	LC				

	IUCN category	IUCN criteria	HD annexes	Bern Convention appendices	Bonn Convention annexes
Cottidae					
Cottus gobio	LC		HD2		
Cottus poecilopus	LC			Bern3	
Gasterosteidae					
Pungitius platygaster	LC				
Percidae					
Gymnocephalus baloni	LC		HD2,4	Bern3	
Gymnocephalus cernuus	LC				
Gymnocephalus schraetser	LC		HD2,5	Bern3	
Perca fluviatilis	LC				
Romanichthys valsanicola	CR	B1ab(ii,iii)+2av(ii,iii)	HD2,4		
Sander lucioperca	LC				
Sander volgensis	LC			Bern3	
Zingel streber	LC		HD2	Bern3	
Zingel zingel	LC		HD5	Bern3	
Gobiidae					
Neogobius fluviatilis	LC			Bern3	
Neogobius gymnotrachelus	LC				
Neogobius kessleri	LC			Bern3	
Neogobius melanostomus	LC				
Proterorhinus semilunaris	LC			Bern3	

DRAFT CARPATHIAN RED LIST OF THREATENED AMPHIBIANS (LISSAMPHIBIA)

Compiled by Peter Urban & Ján Kautman

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Summary

Results and recommendations

The status of amphibians was assessed at two regional levels: in each of the Carpathian countries and in the whole Carpathians.

From 18 amphibian taxa that occur in the Carpathian region, only 6 species (33.3%) were considered threatened, classified as "Vulnerable". Others were classed in categories "Near Threatened" (11) and "Least Concern" (1). Status of amphibian species in the Carpathians is less favourable than at European regional level, where 22.9% were considered threatened. In the Carpathians the amphibians are classed in the category "Vulnerable" only and in the geographical Europe 2.4% are "Critically Endangered", 7.2% "Endangered" and 13.3% "Vulnerable". A similar pattern was seen in the EU 27 (22.0% threatened, of which 2.4% CR, 6.1 % EN and 13.4 %VU) (Temple & Cox 2009).

Methods

The status of all species was assessed using the IUCN Red List Criteria (IUCN 2001) and all assessments followed the Guidelines for Application of IUCN Red List Criteria at Regional Levels (IUCN 2003), Guidelines for Using the IUCN Red List Categories and Criteria (IUCN 2005) and Rules of Procedure IUCN Red List Assessment Process 2013–2016 (IUCN 2012), too. The authors assessed the status of species for the whole of the Carpathians using "categories of threat", that were available in existing national red lists and red books. As a result, this Carpathian List of Endangered Species comprises species for which the category of threat in the whole region was estimated to be one of the following: Critically Endangered (CR); Endangered (EN) or Vulnerable (VU). Categories Extinct (EX), Regionally Extinct (RE) and Data Deficient (DD) were used, too.

Additional criteria applied when choosing species categories was inclusion of the species that are Endemic to the Carpathians, listed in the European Union's Habitat Directive and listed in the Bern Convention.

Notes on taxonomy

In the Carpathians, there is an occurrence of hybridisation zones of some amphibian taxa, which are situated in the transition zone between the mountains and lowlands. Natural hybridization and introgression is recorded for example between the newt species *Triturus vulgaris* and *Lissotriton montandoni*, in the group of Crested newts (*Triturus cristatus superspecies*) - closely related species complex (*Triturus cristatus*, *T. dobrogicus* and *T. carnifex*) with parapatric distributions and between frog species *Bombina bombina* and *Bombina variegata*. Current patterns result from present and historical population –environment interactions that act on each of the hybridizing taxa.

Remarks on the choice of species

Classification based on the number, trend and distribution (geographic ranges or the patterns of habitat occupancy) of the evaluated taxa is very complicated due to problems of spatial scale. National Red List databases of threatened species are in some cases still incomplete and inconsistent, as detailed knowledge about the distribution, abundance and trends of most amphibian species is not very developed. Much national information is not from the Carpathian region only. Fundamental inventory is needed in many Carpathian areas (including protected areas) in order to draw any solid conclusion about the list of species, their distribution, density and threats. Therefore, the choice of species (taxa) was difficult.

The IUCN criteria were assigned not only depending on the occurrence and trends of taxa in Carpathian orographic areas (Alpine biogeographical region), but also on

the situation in adjacent areas, especially in Pannonic biogeographical region. It is especially difficult to assess the species living in lowland areas only or species with most predominant occurrence at lower altitudes. Without considering the occurrence in adjacent areas, the result of the evaluation would have been unrealistic and illogical in many cases, as the data would have been taken out of context of the actual status of the species. This concerns species *Bombina bombina*, *Pelobates fuscus*, *Rana arvalis*, *Rana esculenta-complex*, *Triturus dobrogicus* and partially *Hyla arborea* and *Triturus vulgaris*.

Overview of the state of endangerment, endemic species in the Carpathians

See Table 1.

The conservation of Carpathian amphibians is regulated by different laws at the international and national levels. At the European level, the Habitats Directive (Council Directive 92/43/EEC) is the most important legal tool for their protection and was transposed into national laws.

Main threats

Amphibians are excellent indicators of the quality of the overall environment, as they are very sensitive to perturbations in ecosystems (Temple & Cox 2009). The main threat for amphibians in the Carpathians (as well as for reptiles) is habitat loss (loss of temporary freshwater habitats, e. g. seasonal ponds and other wetlands), deterioration, fragmentation and large-scale deforestation in general. The second main threat is pollution (in freshwater habitats water pollution, deterioration and other human disturbance and destruction of eggs) and reduced humidity. It is followed by impact of predators and invasive alien species and road mortality.
The decrease in abundance (increase of threat) of most of the species is significant. For example, it is estimated, that population of optically most common frog *R. temporaria* has decreased by more than 50% (even more at places) in the last decades. Destruction of reproduction sites for agricultural, forestry and water management reasons, extensive usage of pesticides and consequential destruction of food offer (aphids, bark-beetles, agricultural pests) for insectivorous species, growing of coniferous monocultures, building of migration barriers without any effort of impact mitigation as well as still unknown impact of the amphibian disease *chytridiomycosis* caused by a fungi *Batrachochytrium dendrobatidis* spread in the Carpathians, all this is a complex of negatively limiting factors of the amphibian population in the Carpathians. Generally said, many reproduction sites had vanished. All the amphibian species can be found when monitoring of these species, however, as the abundance of amphibian populations was not assessed in the past, only explicit experience from a long term observation can confirm, that the abundance of most of amphibian species populations at most of the observed sites is decreasing.

New challenges

Proposed Red List of Amphibians gives the actual information on the status of this group in the Carpathian region. It brings inspiration (and need) not only for completing the missing data for some of the listed species, but also for future projects and studies on Lissamphibia and their habitats.

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Table 1: Overview of the status of amphibians of the Carpathians

Taxon	SK	CZ	HU	PL	RO	RS	UA	Proposed IUCN RL category (Carpathians)	Red List Status - criteria	Endemic to Carpathians	HD Annexes	Bern Convention Appendix
Pelobates fuscus (Laurenti, 1768)	VU	CR	LC				NT	VU	A4 acde, B2 b (i-v)	N	IV	II
Rana arvalis Nilsson, 1842	EN	EN	LC				NT	VU	A1,2 abcd	N	IV	II
Rana lessonae Camerano, 1882 [Pelophylax lessonae]	EN	CR	LC				LC	VU	A2, acde	N	IV	
Triturus alpestris (Laurenti, 1768) [Mesotriton alpestris]	VU	NT	LC		VU		NT	VU	A2, acd	N		
Triturus cristatus (Laurenti, 1768)	CR	CR	LC	NT	VU		LC	VU	A2, acd	N	II, IV	II
Triturus montandoni (Boulenger, 1880) [*Lissotriton montandoni*]	VU	CR		LC	VU		LC	VU	A2,4 acde	Y	II, IV	II

Taxon	SK	CZ	HU	PL	RO	RS	UA	IUCN RL category (Carpathians)	Endemic to Carpathians	HD Annexes	Bern Convention Appendix
Bombina bombina (Linnaeus, 1758)	VU	EN	LC				LC	NT	N	II, IV	II
Bombina variegata (Linnaeus, 1758)	NT	VU	LC		NT		LC	NT	N	II, IV	II
Bufo bufo (Linnaeus, 1758)	NT	LC	LC		NT		LC	NT	N		
Bufo viridis Laurenti, 1768 [Pseudepidalea viridis]	NT	NT	LC		NT		LC	NT	N	IV	II
Hyla arborea (Linnaeus, 1758)	NT	NT	LC		VU		LC	NT	N	IV	II
Pelobates fuscus (Laurenti, 1768)	VU	CR	LC				NT	VU	N	IV	II
Rana arvalis Nilsson, 1842	EN	EN	LC				NT	VU	N	IV	II
Rana dalmatina Fitzinger, 1838	LC	LC	LC	NT	VU		NT	NT	N	IV	II
Rana esculenta Linnaeus, 1758 [Pelophylax esculentus]	NT	LC	LC				LC	LC	N	V	
Rana lessonae Camerano, 1882 [Pelophylax lessonae]	EN	CR	LC				LC	VU	N	IV	
Rana ridibunda Pallas, 1771 [Pelophylax ridibundus]	VU	NT	LC					NT	N	V	
Rana temporaria Linnaeus, 1758	NT	LC	LC		VU		LC	NT	N	V	
Salamandra salamandra (Linnaeus, 1758)	LC	LC	LC		VU		LC	NT	N		
Triturus alpestris (Laurenti, 1768) [Mesotriton alpestris]	VU	NT	LC		VU		NT	VU	N		
Triturus cristatus (Laurenti, 1768)	CR	CR	LC	NT	VU		LC	VU	N	II, IV	II
Triturus dobrogicus (Kiritzescu, 1903)	VU		NT				NT	NT	Y	II	II
Triturus montandoni (Boulenger, 1880) [Lissotriton montandoni]	VU	CR		LC	VU		LC	VU	Y	II, IV	II
Triturus vulgaris (Linnaeus, 1758) [Lissotriton vulgaris]	NT	LC	LC		VU		LC	NT	N		

DRAFT CARPATHIAN RED LIST OF THREATENED REPTILES (REPTILIA)

Compiled by Peter Urban & Ján Kautman

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Summary – Results and recommendations

The status of Reptiles was assessed at two regional levels:
- each Carpathian country, and the whole Carpathians.
From 16 Reptile species that occur in the Carpathian region, 7 (43.8%) were considered threatened, of which 1 species (6.3%) (*Vipera ursinii*) as "Critically Endangered", 3 (18.8%) (*Emys orbicularis*, *Testudo hermanni* and *Vipera ammodytes*) as "Endangered" and 3 (18.8%) (*Ablepharus kitaibelii*, *Coronella austriaca* and *Zamenis longissimus*) as "Vulnerable" (Table 1). A further four reptile species were classed as "Near Threatened" and five species as "Least Concern". Status of reptile species in Carpathians is less favourable than at the European regional level, where 19.4% of Reptiles are threatened, with 4.3% "Critically Endangered", 7.9% "Endangered", and 7.1% "Vulnerable" species. Within the EU27 the pattern is similar in the geographical Europe: 21.1% of Reptiles are threatened, with a similar break down between the three threatened categories (Cox & Temple 2009).

Methods

The status of all species was assessed using the IUCN Red List Criteria (IUCN 2001) and all assessments followed the Guidelines for Application of IUCN Red List Criteria at Regional Levels (IUCN 2003) and Guidelines for Using the IUCN Red List Categories and Criteria (IUCN 2005) and Rules of Procedure IUCN Red List Assessment Process 2013–2016 (IUCN 2012), too. The authors assessed the status of species for the whole of the Carpathians using "categories of threats" in some countries available from existing country Red Lists and Red Books. As a result, this Carpathian List of Endangered Species comprises species for which the category of threat in the whole region was estimated to be one of the following: Extinct (EX); Regionally Extinct (RE); Critically Endangered (CR); Endangered (EN); or Vulnerable (VU). Additional criteria were applied when choosing species categories included whether the species was: Endemic to the Carpathians; Listed in the European Union's Habitat Directive and Listed in the Bern Convention Appendices.
The IUCN criteria were assigned, using not only the occurrence and trends of taxa in Carpathian orographic units (Alpine biogeographic region), but also considering the situation in adjacent areas and especially in Pannonian (biogeographic) region. Especially species living only in lowland areasor species with most predominant occurrence at lower altitudes aredifficult to assess in the evaluation of the Carpathians only. Without considering the occurrence in adjacent areas theevaluation would be in many cases unrealistic, illogical if taking out the context of the actual status of the species.

Remarks on the choice of species

Classification based on the sizes of numbers, trends and distribution (geographic ranges or the patterns of habitat occupancy) of evaluated taxa is very complicated by problems of spatial scale. Databases on the red lists of threatened species are on national level in some cases still incomplete and inconsistent, because detailed knowledge about the distribution, abundance and their trends of most reptile species is not very good. Much information available is not from the Carpathian area of the country only. Many Carpathian areas (including protected areas) need a fundamental inventory in order to draw any solid conclusions about the list of species, their distribution, density and threats. Therefore, the choice of species (taxa) was quite difficult.
The consideration of the adjacent areas to the Carpathians (mostly lowland regions) was particularly a case for the species *Emys orbicularis* and *Ablepharus kitaibelii*. Their occurrence is restricted to the Pannonian region.
Assessment and classification of taxa into categories reflects the assessment of their real status, comparisons of mutual status of more taxa and their perspective in the near future.

Overview of the state of endangerment, endemic species in the Carpathians

See Table 1.

The conservation of Carpathian Reptiles is regulated by different laws at international, national and sub-national levels. At the European level, the Habitat Directive (Council Directive 92/43/EEC) transposed into national law, is the most important legal tool for their protection. The outputs from this project can be applied at Carpathian scale to identify priority species for protection and for some regional research and monitoring programmes.

Main threats

The main threats for Reptiles are (like for Amphibians) habitat loss, deterioration, fragmentation and large-scale deforestation in general, pollution, harvesting, deliberate persecution and other human disturbance (destruction of eggs, e. g. *Emys orbicularis*) and road mortality.

The most serious negative factors influencing the occurrence of reptiles is use of chemicals (especially insecticides), anthropic pressure leading to the decrease of food base, succession of xerotherm habitats by (many times) invasive plant and tree species (e.g. acacia tree) and a low level of mosaic patterns in the landscape. For this reason there was a decrease in the population of the most common reptile *Lacerta agilis* in the past years. Its abundance decreased at many sites significantly, somewhere even behind the point of observation.

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Table 1: Overview of the status of reptiles of the Carpathians

Taxon	SK	CZ	HU	PL	RO	RS	UA	Proposed IUCN RL category (Carpathians)	Red List Status - criteria	Endemic to Carpathians	HD Annexes	Bern Convention Appendices
Ablepharus kitaibelii Bibron & Bory de Saint-Vincent, 1833	VU		LC					VU	A2,4 ace, C1,2a	N	IV	II
Coronella austriaca Laurenti, 1768	VU	VU	LC	LC	VU		NT	VU	A2,4 ace, C1,2a	N	II, IV	II
Elaphe longissima (Laurenti, 1768) [Zamenis longissimus]	NT	CR	LC	EN	VU		NT	VU	A2,4 acde, C1,2ab	N	IV	II
Emys orbicularis (Linnaeus, 1758)	CR		NT		VU		NT	EN	A2,4 acde, B2 ab (i-v)	N	II, IV	II
Testudo hermanni Gmelin, 1789					EN			EN	A2,4 acde	N	II, IV	II
Vipera ammodytes (Linnaeus, 1758)					EN			EN	A2,4 acde	N		II
Vipera ursinii (Bonaparte, 1835)			VU		CR			CR	B2 ab (i-v)	N	II, IV	II

Taxon	SK	CZ	HU	PL	RO	RS	UA	IUCN RL category (Carpathians)	Endemic to Carpathians	HD Annexes	Bern Convention Appendices
Ablepharus kitaibelii Bibron & Bory de Saint-Vincent, 1833	VU		LC					VU		IV	II
Anguis fragilis Linnaeus, 1758	LC	LC			VU		LC	LC			III
Coluber caspius Gmelin, 1789			LC					LC		IV	
Coronella austriaca Laurenti, 1768	VU	VU	LC	LC	VU		NT	VU		II, IV	II
Elaphe longissima (Laurenti, 1768) [Zamenis longissimus]	NT	CR	LC	EN	VU		NT	VU		IV	II
Emys orbicularis (Linnaeus, 1758)	CR		NT		VU		NT	EN		II, IV	II
Lacerta agilis Linnaeus, 1758	NT	NT	LC				LC	LC		IV	II
Lacerta viridis (Laurenti, 1768)	NT	CR	LC	RE	LC		VU	NT		IV	II
Natrix natrix (Linnaeus, 1758)	LC	LC	LC				LC	LC			II
Natrix tessellata (Laurenti, 1768)	VU		LC		NT		LC	NT		IV	II
Podarcis muralis (Laurenti, 1768)	LC	CR	LC		VU			NT		IV	II
Testudo hermanni Gmelin, 1789					EN			EN		II, IV	II
Vipera ammodytes (Linnaeus, 1758)					EN			EN			II
Vipera berus (Linnaeus, 1758)	NT	NT	LC		EN		NT	NT		IV	
Vipera ursinii (Bonaparte, 1835)			VU		CR			CR		II, IV	II
Zootoca vivipara (Jacquin, 1787)	LC	NT	LC		LC		LC	LC		IV	II

DRAFT CARPATHIAN RED LIST OF BIRDS (AVES)

Peter Puchala, Miroslav Demko, Anton Krištín & Goran Sekulic

Introduction (Background)

Birds belong to a very popular animal group and have enjoyed a great attention for a long time. Due to this fact there is a lot of data on distribution and abundance of most of bird species, mainly in Central Europe. Long-term monitoring of bird populations enables to estimate their trends on different levels. Red list of threatened bird species is frequently updated and every fourth year re-evaluated. The scientific authority for this process on global level represents BirdLife International. The recent IUCN Red list of birds comprises more than 10 000 species (BirdLife International 2013). Almost 200 species worldwide are recently considered as being critically endangered. This number has reached in all-time the highest value. Almost 400 species are considered as endangered and 713 species are listed in a category vulnerable.

The last IUCN Red List on European level contains 773 bird species. From this number two of them are considered as extinct, four species critically endangered, 11 species endangered and 21 species vulnerable. The last comprehensive Red List of European bird species including the population estimates and trends was published by BirdLife International in 2004.

There were already several evaluations of status of threatened bird species at a Carpathian level. The last Red List was published in 2003, where 29 bird species in total were selected Witkowski et al. 2003). Out of them seven species were considered as critically endangered, 11 species endangered and 11 species vulnerable. However that list was based on older categories and criteria (IUCN 1995).

Method of assessment

This Red List of endangered bird species of Carpathians is based on data provided by 7 particular Carpathian countries. The evaluation on national level was done by each country itself and data were filled in specially developed database. Basic data contained conservation status, category, criteria used in evaluation, distribution range within individual countries according to orographic units, population data (when accessible) and in some cases information about trends.

The assessments were based on national Red Lists from individual countries. The last Red List of birds of the Czech Republic was published in 2003 (Šťastný & Bejček 2003). Polish Red Data Book was published in 2001 (Głowaciński 2001). The checklist of endangered bird species of Slovakia based on older IUCN categories and criteria (IUCN 1995) was published in 2001 (Krištín *et al.* 2001). However, actual IUCN categories and criteria (IUCN 2012) were used in recent Red List of birds in Slovakia (Demko *et al.* 2013), parallel with preparation of the Carpathian Red List.

Assessment methodology

The final assessment of bird species was based on assessed categories provided by individual countries (Table 1). All species included into database were considered during assessment process. However, the common approach was to assess properly each bird species that belongs to one of the categories VU, EN, CR, RE or EX in at least one country. The final assessment was done based on data from all countries, including conservation status, IUCN criteria used (IUCN 2013), population data, trend data.

One of the important variables for the assessment was the size of the breeding population. Quite a good data on population and a number of breeding pairs were available for some of the bird species, especially for the birds of prey.

However, it was quite difficult to obtain data on trends. Data on European level from Pan-European Common Bird Monitoring Scheme PECBMS (EBCC 2013) were used for the final assessment. Other important sources of population trends were the individual countries' reports for European Commission according to Article 12 of Bird Directive (EEA 2014).

One of the difficulties of the assessment was an evaluation of species whose occurrence was in the Carpathians only marginal, e.g. species whose major part of range is located in territories adjacent to Carpathians. Those species occur and occasionally breed in Carpathian region but have quite strong populations in adjacent regions. In such a case the species were included in the category not applicable (NA). Several waterfowl species that have frequently only a small breeding population in the Carpathians were also assessed this way. Species with the category NA were not included into this Red List.

Results (Executive summary)

Altogether 28 bird species were selected for this Red List of Carpathian species. Five species were evaluated in category Critically Endangered, 14 species in category Endangered and 8 species in category Vulnerable. One bird species was considered as regionally extinct for the Carpathians (Table 2).
Some of the species included into the Carpathian Red List are also globally threatened. Two of them *Falco cherrug* and *Aquilla heliaca* were evaluated at global level in higher categories (BirdLife International 2013).
For further development of the Red List of Carpathian bird species, a detailed data collection and establishment of long-term monitoring schemes is very important. It is very important to develop common schemes within all Carpathian countries. That would enable better re-evaluation of conservation status of endangered species. Regular assessments on national level are very important as well.

Main threats

One of the most important threats to the birds in the Carpathian region is habitat alteration, fragmentation and destruction. This threat is critical for several species listed in the Red List. Birds of prey and cavity breeding birds needing old forests are affected the most; however, birds of steppe habitats and species related to agricultural land are affected as well.
Most of the red list bird species belong to the group of birds of prey, which are negatively affected by decreasing coverage of old growth forest, important for their breeding. This factor, together with interruptions during breeding, is crucial for their population decrease. Changes in habitats affected strongly also forest gallinacean birds *Tetrao urogallus* and *Tetrao tetrix*. Their populations have decreased rapidly in all Carpathian countries.
Habitat changes connected to changes in agricultural techniques and abandonment of traditional agricultural practices are also one of the important factors. They caused rapid decline of some species populations, e.g. as *Perdix perdix*, *Circus pygargus*.
One of the very important threats, especially for birds of prey, is a bird crime. Every year there are several cases of illegal shooting or intoxication by illegal poisons in certain countries (Slovakia, Hungary, Czech Republic). Quite important causes of population decline of those species are collisions with high voltage electric lines.

Table 1: List of the bird species with the status of threat in the Carpathians and within individual countries

species	Carpathians	CZ	SK	PL	UA	HU	RO	RS	global
Milvus milvus	CR (A1c)	CR	EN		EN	NT			NT
Milvus migrans	EN (D, C2a)	CR	EN		VU	NT			LC
Circaetus gallicus	EN (D)								LC
Aquila heliaca	EN (D)								VU
Aquila chrysaetos	VU (D)	LC	NT	VU	CR	LC	VU	NT	LC
Aquila pennata	EN (D, A2)	NE	CR		EN	LC	CR	NT	LC
Circus pygargus	EN (D)	EN	VU			LC			LC
Falco cherrug	CR (D, A1c)	CR	CR			EN	CR		EN
Tyto alba	EN (D, A2)	EN	VU		VU	LC			LC
Charadrius morinellus	CR (D, C2ai)			RE			CR		LC
Tringa totanus	VU (A2)	CR	VU			LC			LC
Alectoris graeca	EN (D)							VU	NT
Perdix perdix	VU (A2)	NT	VU						LC
Tetrao urogallus	EN (A)	CR	EN	EN	NT				LC
Tetrao tetrix	EN (A2)	EN	EN	EN	CR	LC	EN		LC
Coracias garrulus	EN (A2)	RE	CR			NT		VU	NT
Eremophila alpestris	CR (D)						CR	VU	LC
Lullula arborea	VU (A2)	EN	NT				EN	VU	LC
Anthus campestris	VU (A2)	CR	VU			LC			LC
Motacilla citreola	EN (D)		CR	EN		LC			LC
Luscinia svecica svecica	EN (D)	EN	EN	CR		LC			LC
Monticola saxatilis	EN (A2)	RE	CR	RE	CR	LC	EN	NT	LC
Phoenicurus phoenicurus	VU (A2)	LC	VU			LC			LC
Phylloscopus trochiloides	EN (D)	VU	EN						LC
Tichodroma muraria	VU (A2)	NE	CR	CR		LC	VU	VU	LC
Lanius senator	CR (A2)	RE	RE			LC			LC
Lanius minor	VU (A2)	RE	EN	RE		LC			LC
Pyrrhocorax graculus	RE	NE						RE	LC

Conservation practices and management

The Red List of Carpathian bird species is a very important source of information on the current status of populations of endangered and threatened species. The list could be an essential guide to conservation efforts focused on individual species. IUCN categories as themselves could be a key to guiding priorities for conservation measures.
The presented list could be very useful guide for common action within all Carpathian countries for selected bird species in higher categories. The main threats seem to be very similar within all countries. That is a reason for developing of common species conservation focused strategies on Carpathian level. Such an approach is extremely important.
It is necessary to repeat the assessment of conservation status within Carpathian region regularly. Regular assessment would provide valuable warning about population dynamics and environmental changes. It would also help to monitor conservation actions and their results.

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Table 2: List of threatened bird species in the Carpathians with IUCN criteria used and their listing in different annexes.

species	IUCN category	IUCN criteria	BD annexes	Bern Convention appendices	Bonn Convention annexes
Accipitridae					
Milvus milvus	CR	A1c	BD1	Bern2	Bonn2
Milvus migrans	EN	D, C2a	BD1	Bern2	Bonn2
Circaetus gallicus	EN	D	BD1	Bern2	Bonn2
Aquila heliaca	EN	D	BD1	Bern2	Bonn1,2
Aquila chrysaetos	VU	D	BD1	Bern2	Bonn2
Aquilla pennata	EN	D, A2	BD1	Bern2	Bonn2
Circus pygargus	EN	D	BD1	Bern2	Bonn2
Falconidae					
Falco cherrug	CR	D, A1c	BD1	Bern2	Bonn1
Tytonidae					
Tyto alba	EN	D, A2		Bern2	
Charadriidae					
Charadrius morinellus	CR	D, C2ai	BD1	Bern2	Bonn2
Scolopacidae					
Tringa totanus	VU	A2		Bern3	Bonn2
Phasianidae					
Alectoris graeca	EN	D			
Perdix perdix	VU	A2	BD2/1 BD3/1	Bern3	
Tetrao urogallus	EN	A2	BD1 BD2/2 BD3/2	Bern3	
Tetrao tetrix	EN	A2	BD1 BD2/2	Bern3	
Coraciidae					
Coracias garrulus	EN	A2	BD1	Bern2	Bonn2
Alaudidae					
Eremophila alpestris	CR	D		Bern2	
Lullula arborea	VU	A2		Bern3	
Motacillidae					
Anthus campestris	VU	A2	BD1	Bern2	
Motacilla citreola	EN	D		Bern2	
Muscicapidae					
Luscinia svecica svecica	EN	D	BD1	Bern2	Bonn2
Monticola saxatilis	EN	A2		Bern2	Bonn2
Phoenicurus phoenicurus	VU	A2		Bern2	Bonn2
Phylloscopidae					
Phylloscopus trochiloides	EN	D		Bern2	Bonn2
Tichodromidae					
Tichodroma muraria	VU	A2		Bern2	
Laniidae					
Lanius senator	CR	D		Bern2	
Lanius minor	VU	A2	BD1	Bern2	
Corvidae					
Pyrrhocorax graculus	RE			Bern2	

DRAFT CARPATHIAN RED LIST OF THREATENED MAMMALS (MAMMALIA)

Compiled by Peter Urban & Marcel Uhrin

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Summary – Results and Recommendations

The status of mammals was assessed at two regional levels (1) in each Carpathian state and (2) in the whole Carpathians.
From 109 mammal taxa that occur in the Carpathian region, 23 (25.1%) were considered threatened, of which 2 species (2.2%) (*Alces alces* and *Mustela lutreola*) are Critically Endangered, 3 (3.3%) Endangered and 17 (18.5%) Vulnerable (Table 1). One species, aurochs (*Bos primigenius*) was Extinct. The last wild individual is reputed to have died in 1627. The aurochs is the ancestor of domestic cattle (Vuure 2005). Even 14 taxa were classed as Data Deficient. Status of mammal species in the Carpathians is less favourable than at European regional level, where 14.2% of terrestrial mammals are threatened, with 1.5% Critically Endangered, 3.4% Endangered, and 9.3% Vulnerable. Further 3.4% were classified as Data Deficient. Within the EU 25, the pattern is similar, with 14.4% of terrestrial mammals Threatened, although a higher proportion of species is Critically Endangered (2.4%) (Temple & Terry 2007).

Methods

The status of all species was assessed using the IUCN Red List Criteria (IUCN 2001) and all assessments followed the Guidelines for Application of IUCN Red List Criteria at Regional Levels (IUCN 2003) and Guidelines for Using the IUCN Red List Categories and Criteria (IUCN 2005) and Rules of Procedure for IUCN Red List Assessment Process 2013–2016 (IUCN 2012), too. The authors assessed the status of species for the whole Carpathians using "categories of threats" in some countries available from existing country and / or regional red-lists and red-books (e.g. Rakonczay 1989, Shcherbak 1994, Vološčuk 1996, Báldi et al. 2001, Głowaciński 2001, 2002, Žiak & Urban 2001, Okarma & Perzanowski 2003, Paunović *et al.* 2004). As a result, the Carpathian Red List of threatened Species comprises species classified under the Red List Categories Vulnerable (VU), Endangered (EN) or Critically Endangered (CR), or Extinct (EX) and Regionally Extinct (RE). Additional criteria applied when choosing species categories included whether the species was: Endemic to the Carpathians; Listed in the European Union's Habitat Directive and Listed in the Bern Convention appendices.
The IUCN criteria were assigned depending not only on the occurrence and trends of taxa in Carpathian orographic areas (Alpine biogeographic region), but also on the situation in adjacent areas and especially in Pannonic area (biogeographical region). It is especially difficult to assess the species living in lowland areas only or species with most predominant occurrence at lower altitudes.

Notes on taxonomy

Myotis blythii oxygnathus is considered as *Myotis blythii.*

Remarks on the choice of species

Classification based on the numbers, trend and distribution size (geographic ranges or the patterns of habitat occupancy) of taxa evaluated is very complicated due to the problems of spatial scale. The red list databases of threatened species on national level are in some cases still incomplete and inconsistent.

Overview of the state of endangerment, endemic species in the Carpathians

See Table 1, 2.
The conservation of Carpathian mammals is regulated by different laws at international and national level. At the European level, the Habitats Directive (Council Directive 92/43/EEC) is the most important legal tool for their protection and was transposed into national law.

Main threats

The main threat to mammals is habitat loss, deterioration, habitat fragmentation and deforestation, and forest destruction in general. The second group of threats in-

cludes intensive hunting and illegal killing, poaching, poisoning and irrational pest control.
Bats are affected by disturbance of colonies in the roosts, unauthorised visiting and disturbing colonies in lofts and subterranean spaces, natural succession in roosts after mining. Situation in blocks of flats, where important populations of some species roost (e.g. *N. noctula*), could be considered a special problem.
For some alpine species, an increasing number of tourists and sport activities (e. g. hiking, skiing, rock-climbing, ski alpinism, paragliding) is a threat.

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Table 1: Overview of the status of mammals of the Carpathians

Taxon	SK	CZ	HU	PL	RO	RS	UA	IUCN RL category (Carpathians)	Red List Status criteria	Endemic to Carpathians	HD Annexes	Bern Convention Appendices
Alces alces (Linnaeus, 1758)	CR	CR						CR	D1			III
Apodemus agrarius (Pallas, 1771)	NE	LC				NT		LC				
Apodemus flavicollis (Melchior, 1834)	LC	LC				LC		LC				
Apodemus sylvaticus (Linnaeus, 1758)	LC	LC				LC		LC				
Apodemus uralensis (Pallas, 1811)	LC	NE						LC				
Arvicola amphibius (Linnaeus, 1758)	LC					NT		LC				
Arvicola scherman (Shaw, 1801)	DD							DD				
Barbastella barbastellus (Schreber, 1774)	NT	LC	NT	DD	VU	DD	VU	NT			II, IV	II
* Bison bonasus (Linnaeus, 1758)	EN			VU	RE		CR	EN	D1		II, IV	III
Bos primigenius Bojanus, 1827	EX			EX				EX				
Canis aureus (Linnaeus, 1758)	NE	NE				NT		NE			V	
* Canis lupus (Linnaeus, 1758)	NT	CR	VU	NT	VU	VU		VU	A2 cd		II, IV*, V**	II
									* except the Polish and Slovak populations, ** Polish and Slovak populations			
Capreolus capreolus (Linnaeus, 1758)	NE	LC				NE		NE				III
Castor canadensis Kuhl, 1820			LC					NE				
Castor fiber Linnaeus, 1758	LC	VU	LC		•	•	LC	LC			II, IV*, V**	III
										* except the Polish populations, ** Polish populations		
Cervus elaphus Linnaeus, 1758	NE	LC				VU		NE				III
Cervus nippon Temminck, 1838		LC						LC				III
Clethrionomys glareolus (Schreber, 1780)	LC	LC				LC		LC				
Cricetus cricetus (Linnaeus, 1758)	VU	LC						DD			IV*, V**	II
										* except the Hungarian populations, ** Hungarian populations		
Crocidura leucodon (Hermann, 1780)	LC	LC	LC			NT		LC				III
Crocidura suaveolens (Pallas, 1811)	LC	LC	LC			NT		LC				III
Dama dama (Linnaeus, 1758)	NE	LC	LC			NE		NE				
Dryomys nitedula (Pallas, 1778)	LC	LC	NT	NT	VU	NE	VU	LC			IV	III
Eliomys quercinus (Linnaeus, 1766)	DD			CR	VU		DD	DD				III
Eptesicus nilssonii (Keyserling & Blasius, 1839)	NT	LC		NT	EN	NA	EN	NT			IV	II

Taxon	SK	CZ	HU	PL	RO	RS	UA	IUCN RL category (Carpathians)	Red List Status criteria	Endemic to Carpathians	HD Annexes	Bern Convention Appendices
Eptesicus serotinus (Schreber, 1774)	LC	LC	LC		VU	NT	NT	LC			IV	II
Erinaceus roumanicus Barrett-Hamilton, 1900	LC	LC				NT		LC				
Erinaceus europaeus Linnaeus, 1758	DD	LC						LC				III
Felis silvestris Schreber, 1775	DD	DD	NT	EN	VU	NE	LC	DD			IV	II
Glis glis (Linnaeus, 1766)	LC	LC	LC	NT	NT	NT		NT				III
Hypsugo savii (Bonaparte, 1837)	DD		LC			NT		LC			IV	II
Chionomys nivalis (Martins, 1842)	LC			LC			NT	LC				III
Lepus europaeus Pallas, 1778	LC	NT				NE		LC				
Lutra lutra (Linnaeus, 1758)	VU	VU	NT		VU	VU	VU	VU	A1 abcd		II, IV	II
Lynx lynx (Linnaeus, 1758)	EN	CR	VU	NT	VU	VU	NT	EN	A2 acd		II, IV, V	III
* Marmota marmota latirostris (Linnaeus, 1758)	VU			VU				VU	A3c, B2a	Y	II, IV	III
Martes foina (Erxleben, 1777)	LC	LC				NT		LC				III
Martes martes (Linnaeus, 1758)	LC		LC			NT		LC			V	III
Meles meles (Linnaeus, 1758)	LC	LC				NE		LC				III
Micromys minutus (Pallas, 1771)	LC	DD	LC					LC				
Microtus agrestis (Linnaeus, 1761)	LC	LC	LC					LC				
Microtus arvalis (Pallas, 1778)	LC	LC				LC		LC				
Microtus subterraneus (de Selys-Longchamps, 1836)	LC	LC				LC		LC				
Microtus tatricus (Kratochvil, 1952)	LC			LC	DD		NT	NT			II, IV	II
Miniopterus schreibersii (Kuhl, 1817)	EN		NT	NA	NT	NT	RE	NT			II, IV	II
Mus musculus Linnaeus, 1758	LC	LC				NE		LC				
Mus spicilegus Petenyi, 1882	LC					NT		LC				
Muscardinus avellanarius (Linnaeus, 1758)	LC	LC	LC		NT	NT		LC			IV	III
Mustela erminea Linnaeus, 1758	LC	LC	NT				NT	LC				III
Mustela eversmanii eversmanii Lesson, 1827	DD							DD				
Mustela eversmanii Lesson, 1827	DD	DD	LC			NT		DD			II, IV	II
* Mustela lutreola (Linnaeus, 1761)	RE						CR	CR	A1 abcde, B 1, D 1			II

Taxon	SK	CZ	HU	PL	RO	RS	UA	IUCN RL category (Carpathians)	Red List Status criteria	Endemic to Carpathians	HD Annexes	Bern Convention Appendices
Mustela nivalis Linnaeus, 1766	LC	LC	LC			NT		LC				III
Mustela putorius Linnaeus, 1758	DD	DD				NT		DD			V	III
Mustela vison Schreber, 1777	DD							DD				
Myocastor coypus (Molina, 1782)	NA	LC	LC			DD		NA				
Myotis alcathoe Helversen & Heller, 2001	DD	DD	DD			NA	DD	DD				II
Myotis bechsteinii (Kuhl, 1817)	NT	DD	NT	NT	VU	NE	VU	NT			II, IV	II
Myotis blythii (Tomes, 1857)	NT	CR	LC		NT	NT	VU	NT			II, IV	II
Myotis brandtii (Eversmann, 1845)	NT	LC	LC		EN	NE	NT	NT			IV	II
Myotis capaccinii (Bonaparte, 1837)	NA	NA	NA	NA	VU	NT	NA	VU	A3 c, D2		II, IV	II
Myotis dasycneme (Boie, 1825)	NT	CR	NT	NT	EN	DD	VU	NT			II, IV	II
Myotis daubentonii (Kuhl, 1817)	LC	LC	LC		VU	LC	NT	LC			IV	II
Myotis emarginatus (E. Geoffroy, 1806)	NT	LC	NT	NT	VU	NE	VU	NT			II, IV	II
Myotis myotis (Borkhausen, 1797)	LC	LC	LC			NT	VU	LC			II, IV	II
Myotis mystacinus (Kuhl, 1817)	LC	LC	LC		VU	NT	NT	LC			IV	II
Myotis nattereri (Kuhl, 1817)	NT	LC	LC		VU	NE	VU	LC			IV	II
Neomys anomalus Cabrera, 1907	LC	LC	LC	LC	NT	NT	NT	NT				
Neomys fodiens (Pennant, 1771)	VU	LC	LC		NT	NT		NT				
Nyctalus lasiopterus (Schreber, 1780)	DD	CR	NT			NA	DD	DD			IV	II
Nyctalus leisleri (Kuhl, 1817)	NT	DD	LC	DD	EN	NE	VU	NT			IV	II
Nyctalus noctula (Schreber, 1774)	LC	LC	LC			NT	NT	LC			IV	II
Nyctereutes procyonoides (Gray, 1834)	NA	LC	LC			DD		NA				
Ondatra zibethicus (Linnaeus, 1766)	NE	LC	LC			LC		LC				
Oryctolagus cuniculus (Linnaeus, 1758)	DD	NE						DD				
Ovis aries Linnaeus, 1758	NA		NT			NE		NA				III
Pipistrellus kuhlii (Kuhl, 1817)	DD		LC		VU			LC			IV	II
Pipistrellus nathusii (Keyserling & Blasius, 1839)	DD	DD	LC		VU	NE	NT	DD			IV	II
Pipistrellus pipistrellus (Schreber, 1774)	LC	LC	LC			NT	NT	LC			IV	III
Pipistrellus pygmaeus (Leach, 1825)	LC	LC	LC				NT	LC			IV	II

Taxon	SK	CZ	HU	PL	RO	RS	UA	IUCN RL category (Carpathians)	Red List Status criteria	Endemic to Carpathians	HD Annexes	Bern Convention Appendices
Plecotus auritus (Linnaeus, 1758)	LC	LC	LC		NT	DD	VU	LC			IV	II
Plecotus austriacus (Fischer, 1829)	LC	LC	LC		VU	NT	NT	LC			IV	II
Procyon lotor (Linnaeus, 1758)	NE	LC	LC					NE				
Rattus norvegicus (Berkenhout, 1769)	LC	LC				NE		LC				
Rattus rattus (Linnaeus, 1758)	DD					NT		NE				
Rhinolophus blasii Peters, 1866	NA	NA	NA	NA	VU	NT	NA	VU	A3 c, B1 a, D2		II, IV	II
Rhinolophus euryale Blasius, 1853	EN	NA	NT	NA	VU	NT	NA	VU	A3 c, B1 a		II, IV	II
Rhinolophus ferrumequinum (Schreber, 1774)	VU		LC	LC		NT	VU	VU	A3 c, B1 a		II, IV	II
Rhinolophus hipposideros (Bechstein, 1800)	LC	VU	LC	VU		NT	NT	VU	A3 c, B1 a		II, IV	II
Rhinolophus mehelyi Matschie, 1901	NA	NA	NA	NA		NE	NA	VU	A3 c, D2		II, IV	II
Rupicapra rupicapra carpatica (Couturier, 1938)					VU			VU	A2 ade	Y	V	III
Rupicapra rupicapra balcanica Bolkay, 1925						VU		VU	A1, C1		II, IV	III
Rupicapra rupicapra rupicapra (Linnaeus, 1758)	NE							NE				III
* Rupicapra rupicapra tatrica Blahout, 1972	EN			EN				EN	A2 abcde, B 2b (i-iv)	Y	II, IV	III
Sciurus carolinensis Gmelin, 1788			LC					NE				
Sciurus vulgaris Linnaeus, 1758	LC		LC			NT		LC				III
Sicista betulina (Pallas, 1779)	LC	VU			DD		VU	VU	A1 acd		IV	II
Sicista subtilis (Pallas, 1773)	DD		LC		DD			DD			II, IV	II
Sorex alpinus Schinz, 1837	VU	VU			NT		NT	VU	A1 c			III
Sorex araneus Linnaeus, 1758	LC	LC	LC			NT		LC				III
Sorex minutus Linnaeus, 1766		LC	LC			NT		LC				III
Spalax graecus Nehring, 1898					VU			VU	D2			II
Spermophilus citellus (Linnaeus, 1766)	VU	CR	VU					VU	A3 c, B1 a		II, IV	II
Sus scrofa Linnaeus, 1758	NE	LC				LC		NE				
Talpa europaea Linnaeus, 1758	LC	LC	LC			NT		LC				
* Ursus arctos Linnaeus, 1758	VU	CR	VU	NT	VU	VU	VU	VU	A2 cd		II, IV	II
Vespertilio murinus Linnaeus, 1758	DD	DD	LC	LC	VU	NT	NT	DD			IV	II
Vormela peregusna (Guldenstaedt, 1770)						VU		VU	A2 c		II, IV	II

DRAFT LIST OF INVASIVE ALIEN SPECIES OF THE CARPATHIAN REGION

Compiled by Ema Gojdičová (ed.)

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Introduction

Many of alien plant and animal species are beneficial for humans. However, a significant number of them can become invasive and have serious and growing adverse impacts on biodiversity and related ecosystem services, human health and economy. The threat to biodiversity and ecosystem services that invasive alien species bring can have different forms, such as impact on native species ecosystem structure and function (alteration of habitats, competition, predation, replacement of native species). Globalisation processes have created new pathways for the introduction of non-native species to Europe including the Carpathian region. Complete lists of alien flora and fauna or in particular lists of invasive alien species are a helpful tool to address biological invasions on national or regional level. Therefore, in the last decades detailed catalogues of alien flora or fauna or various lists of invasive alien species causing impacts on biodiversity, economic activities and human health have been produced from local/national to global level. When focusing on Europe, several European institutions, initiatives or projects have produced lists of invasive alien species: EPPO, EEA/SEBI 2010, DAISIE, NOBANIS. The most comprehensive list is the "metalist" of invasive alien species in Europe (Genovesi & Scalera 2007) comprising more than 500 species. The proposed EU regulation on the prevention and management of the introduction and spread of invasive alien species will create a new challenge to tackle invasive alien species issue on three levels: EU, regional (e.g. biogeographical regions), national (member states) fostering cooperation and coordination.

Assessment method

Countries in the Carpathian region have already published or are developing overviews of alien flora and fauna with focus on invasive alien species, however, available data differ from country to country (see the references).

Based on available data and within limited time and resources available in the project there was no ambition to provide complete list of alien species in the Carpathians with the information on their status. Challenging task was to prepare the list of invasive alien species already causing problems in this region.

For the purpose of compiling the Carpathian List of Invasive Alien Species the guideline was prepared and following sources were used: flora and fauna databases, published catalogues or lists of alien species/invasive alien species, including papers on some systematic groups and in some cases unpublished data of experts involved. Collected data were fed into the project on-line form supported by maps.

Species were classified according to their status in one of the following categories: casual alien species (cas), naturalized alien species (nat), invasive alien species (inv). In case that a plant or animal species has not been found in the country (its Carpathian region) yet (so attention to the occurrence in a country has been given to this particular species), category not found (notfd) was used. Category not known (notkn) was used when no information about the particular species was available. In special cases a species native (ntv) to one of the project countries but alien to the others was possible to list also.

Species identified as invasive in one of the Carpathian countries were assessed as candidates for the Carpathian List only. The expert team evaluated candidate species using criteria agreed in the guidelines: number of countries/orographical units and area occupied by the species, as well as impacts on biodiversity (human health/economy - optional), in some cases invasive potential of the species was taken into account. Experience and knowledge of experts involved played very important role in the evaluation process, too.

Results (Summary)

Taxonomic groups assessed for the Carpathian List of Invasive Alien Species followed the scope of the Carpathian Red List species assessment. However, invasive alien species were not identified in some of selected taxonomic groups, e.g. spiders (Araneae), dragonflies and damselflies (Odonata), birds (Aves).

The final list presented in the table No 1. covers Vascular plants, Vertebrates and some of the selected groups of Invertebrates. The list comprises 77 species, 37 are plant species and 40 animal species. From plant species, 32 are herbs and 5 woody plants. Majority of animal species are Invertebrates, 14 arthropods and 11 molluscs are listed. The most numerous group of Vertebrates are fishes, 10 species are on the list.

Comparing the final list to the known European lists of invasive alien species, 20 plant and 20 animal species are included at least in one of the following lists: EPPO, EEA/SEBI, DAISIE, NOBANIS. Detailed information on listed species across the Carpathian region is available in the project on-line platform.

Main threats

In the Carpathian region majority of listed invasive plant species occupies man-made habitats such as road and railway sides, waste dumps, abandoned arable land, urban areas, forestry plantations. The most infested natural and semi-natural habitats are various types of wetlands (various water bodies and their banks, marshes, floodplain forests) and grasslands. Forest habitats in general resist invasive alien species, however, natural disturbances (fire, wind), as well as human activities open the space for invasive plant species. Invasive animal species first of all represent serious threat to the Carpathian native species, e.g. fish, amphibians in general are the most threatened groups, water birds nesting in wetlands, or European mink and otter are also threatened by American mink.

New challenges

Proposed list of invasive species gives the first picture of the status of some alien species in the Carpathian region. It brings inspiration (and need) not only for completing the missing data for some of listed species but also for future projects and studies on alien species in the region: inventory of alien flora and fauna, detailed distribution (trends) and adverse impacts of already listed invasive species, detection of new alien species. As invasive species do not respect borders, the list opens space for cooperation and effective coordinated management of invasive species.

Abbreviations:

DAISIE – Delivering Alien Invasive Species Inventories for Europe
EEA – European Environment Agency
EPPO – European Plant Protection Organisation
SEBI (SEBI 2010) – Streamlining European Biodiversity Indicators
NOBANIS – European Network on Invasive Species

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Table 1: Carpathian List of Invasive Alien Species

Taxon	Kingdom	SK	CZ	HU	PL	RO	RS	UA	Carpathians
Acer negundo	Plantae	inv	inv	inv	inv	inv	inv	inv	inv
Ailanthus altissima	Plantae	inv	inv	inv	cas	inv	inv		inv
Amaranthus retroflexus	Plantae	inv	inv	inv	inv	inv	nat	nat	inv
Ambrosia artemisiifolia	Plantae	inv	inv	inv	cas	inv	inv	inv	inv
Amorpha fruticosa	Plantae	nat	nat	inv	notfd	inv	inv		inv
Apera spica-venti	Plantae	inv	nat	inv	nat	inv??	ntv		inv
Asclepias syriaca	Plantae	inv	inv	inv	cas	nat	inv	notfd	inv
Aster novi-belgii	Plantae	inv	inv	inv	inv	cas	notfd		inv
Aster lanceolatus	Plantae	inv	inv	inv	cas	inv	inv	inv	inv
Bidens frondosa	Plantae	inv	inv	inv	inv	inv	inv	inv	inv
Cardaria draba	Plantae	inv	nat	ntv	nat	inv	ntv	cas	inv
Conyza canadensis	Plantae	inv	inv	inv	inv	inv	inv	inv	inv
Cuscuta campestris	Plantae	nat	inv	inv	notfd	inv	notfd	inv	inv
Echinochloa crus-galli	Plantae	inv	inv	inv	inv	inv	inv	inv	inv
Echinocystis lobata	Plantae	inv	inv	inv	inv	inv	notfd	cas	inv
Elodea canadensis	Plantae	nat	nat	notfd	inv	inv	inv		inv
Epilobium ciliatum	Plantae	inv	inv	inv???	inv	inv	notfd	notfd	inv
Erigeron annuus	Plantae	inv	inv	inv	inv	inv	inv	inv	inv
Fallopia japonica	Plantae	inv	inv	notfd	inv	inv	inv	inv	inv
Fallopia x bohemica	Plantae	inv	inv	inv	notkn	notfd	notfd	notfd	inv
Fallopia sachalinensis	Plantae	inv	inv	notfd	inv	notfd	notfd	inv	inv
Galinsoga parviflora	Plantae	inv	inv	inv	inv	inv	inv	inv	inv
Galinsoga quadriradiata	Plantae	inv	inv	inv	inv	nat	notfd	inv	inv
Helianthus tuberosus	Plantae	inv	inv	inv	inv	inv	inv	nat	inv
Heracleum mantegazzianum	Plantae	inv	inv	nat	inv	notfd	notfd	notfd	inv
Heracleum sosnowskyi	Plantae	notfd	notfd	inv	inv	notfd	notfd	inv	inv
Impatiens glandulifera	Plantae	inv	inv	inv	inv	inv	notfd	inv	inv
Impatiens parviflora	Plantae	inv	inv	inv	inv	inv	notfd	inv	inv
Juncus tenuis	Plantae	inv	nat	inv	inv	inv	nat	inv	inv
Lycium barbarum	Plantae	inv	inv	inv	cas	inv	notfd		inv
Matricaria discoidea	Plantae	inv	nat	inv	inv	inv	notfd	inv	inv
Parthenocissus inserta	Plantae	nat	inv	inv	inv	inv	notfd	notfd	inv
Phytolacca americana	Plantae	nat	cas	inv	notfd	inv	inv	nat	inv
Robinia pseudoacacia	Plantae	inv	inv	inv	inv	inv	inv	inv	inv
Solidago canadensis	Plantae	inv	inv	inv	inv	inv	notfd	nat	inv
Solidago gigantea	Plantae	inv	inv	inv	inv	inv	inv	nat	inv
Veronica persica	Plantae	nat	nat	inv	inv	inv	nat	inv	inv
Mollusca									
Arion vulgaris	Animalia	inv	inv	inv	inv		notfd		inv
Corbicula fluminea	Animalia	inv	inv	inv	notfd		inv		inv

Taxon	Kingdom	SK	CZ	HU	PL	RO	RS	UA	Carpathians
Dreissena polymorpha	Animalia	inv	inv	inv	inv	inv	notfd		inv
Dreissena rostriformis bugensis	Animalia	inv	notfd	inv	notfd	inv	notfd		inv
Ferrissia clessiniana	Animalia	inv	inv	inv	notfd		notfd		inv
Helix aspersa	Animalia		notkn	inv	notkn		notfd		inv
Lucilla scintilla	Animalia	inv	notfd	notfd	notfd		notfd		inv
Lucilla singleyana	Animalia	inv	notfd	inv	inv		notfd		inv
Physella acuta	Animalia	inv	inv	inv	nat		inv		inv
Potamopyrgus antipodarum	Animalia	inv	inv	inv	nat	inv	inv		inv
Sinanodonta woodiana	Animalia	inv	cas	inv	notfd	inv	inv		inv
Arthropoda									
Orconectes limosus	Animalia	inv	inv	inv	inv	inv	inv		inv
Acanthoscelides obtectus	Animalia	inv	cas	inv	inv	inv	inv		inv
Cameraria ohridella	Animalia	inv	inv	inv	inv	inv	inv	cas	inv
Cydalima perspectalis	Animalia	inv	inv	notfd	notfd		notfd		inv
Diabrotica virgifera	Animalia	inv	inv	inv	inv	inv	inv	cas	inv
Harmonia axyridis	Animalia	inv	inv	inv	inv	inv	inv	inv	inv
Hyphantria cunea	Animalia	nat	inv	notkn	cas	inv	inv	nat	inv
Leptinotarsa decemlineata	Animalia	nat	inv	inv	nat	inv	inv		inv
Leptoglossus occidentalis	Animalia	inv	inv	inv	nat	inv	inv	inv	inv
Meconema meridionale	Animalia	inv	inv	inv	notfd		notfd		inv
Parectopa robiniella	Animalia	inv	inv	inv	cas	inv	inv		inv
Phyllonorycter issikii	Animalia		inv	inv	inv		notfd		inv
Phyllonorycter robiniella	Animalia	inv	inv	inv	nat	inv	inv		inv
Stictocephala bisonia	Animalia	inv	inv	inv	notfd	inv	inv	inv	inv
Chordata									
Osteichthyes									
Ameiurus melas	Animalia	inv	notkn	inv	notfd		inv	inv	inv
Ameiurus nebulosus	Animalia	nat	inv	inv	inv		inv	inv	inv
Carassius gibelio	Animalia	inv	inv	inv	inv		inv	inv	inv
Lepomis gibbosus	Animalia	inv	nat	nat	notfd		inv	inv	inv
Neogobius fluviatilis	Animalia	inv	notfd	notfd	notfd		inv		inv
Neogobius gymnotrachelus	Animalia	inv	notfd	notfd	ntv		inv		inv
Neogobius kessleri	Animalia	inv	notfd	notfd	notfd		inv		inv
Neogobius melanostomus	Animalia	inv	inv	notfd	notfd		inv		inv
Proterorhinus marmoratus	Animalia		notkn	inv	notfd		inv	inv	inv
Pseudorasbora parva	Animalia	inv	inv	inv	cas	inv	inv	inv	inv
Reptilia									
Trachemys scripta	Animalia	inv	cas/inv?	inv	inv	inv		inv	inv
Mammalia									
Mustela vison	Animalia	inv	inv	notkn	inv			nat	inv
Nyctereutes procyonoides	Animalia	nat	inv	cas	inv			inv	inv
Ondatra zibethicus	Animalia	nat/inv?	inv	nat	inv			inv	inv
Rattus norvegicus	Animalia	nat/inv?	nat	nat	inv			nat	inv

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