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**FIRST NATIONAL REPORT OF THE REPUBLIC OF SERBIA
TO THE UNITED NATIONS CONVENTION ON BIOLOGICAL DIVERSITY**

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ACRONYMS AND ABBREVIATIONS

AP	Autonomous Province
CARDS	Community Assistance for Reconstruction, Development and Stabilisation
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
EEA	European Environmental Agency
EIA	Environmental Impact Assessment
EIONET	European Environment Information and Observation Network
EU	European Union
GDP	Gross domestic product
GEF	Global Environment Facility
GIS	Geographical information system
GMO	Genetically modified organism
IBA	Important Bird Areas
INP	Institute for Nature Protection
IPA	Important Plant Areas
IPA	Instrument for Pre-Accession Assistance
LEP	Law on Environmental Protection
LNP	Law on Nature Protection
MAFWM	Ministry of Agriculture, Forestry and Water Management
MEA	Multilateral environmental agreement
MoME	Ministry of Mining and Energy
MOH	Ministry of Health
MESP	Ministry of Environment and Spatial Planning
NCBS	National Council for Biological Safety
NCSD	National Council for Sustainable Development
NEPP	National Environmental Protection Programme
NGO	Non-governmental organization
NSSD	National Strategy for Sustainable Development
PA	Protected Area
PBA	Prime Butterfly Area
RS	Republic of Serbia
SAP	Stabilization and Association Process
SEA	Strategic environmental assessment
SEPA	Serbian Environmental Protection Agency
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change

1. EXECUTIVE SUMMARY

The global decline in biological diversity, i.e. the loss or impairment of habitats, species and genetic variety within species, is leading to a frequently irreparable impoverishment of nature and might undermine the very foundations of humanity's future existence. The Convention on Biological Diversity has been designed to reverse this trend by improving the conservation and sustainable use of biological diversity.

By signing this agreement, the Republic of Serbia expressed its devotion to achieve the goals of convention and to integrate biodiversity conservation into all other sectors. This is an important milestone for improving the state of biodiversity at both national and international levels, taking into account the three main principles of CBD - the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising from the utilization of genetic resources.

This report is Serbia's response to Decision II/17 of the Second Conference of the Parties to the Biodiversity Convention, concerning the form and intervals of national reports by Contracting Parties requested under Article 26 of the Convention. According to the Decision, the first national reports by Parties are to focus as far as possible on measures taken from the implementation of Article 6 of the Convention (General Measures for Conservation and Sustainable Use), as well as the information available on national country studies on biological diversity. An Annex to Decision II/17 contains suggested guidelines for national reporting and the content of this report is following these suggested guidelines.

The report is divided into the following chapters:

- Part 2 provides brief information on Serbia's geography, climate, population and economy;
- Part 3 summarizes the status and importance of biodiversity in Serbia;
- Part 4 provides an overview of the main threats to biodiversity in Serbia;
- Part 5 summarizes policy, legal and institutional framework in Serbia;
- Part 6 describes the country's orientation for the future in biodiversity conservation

Annexes 1-9 provide additional information relevant for this report.

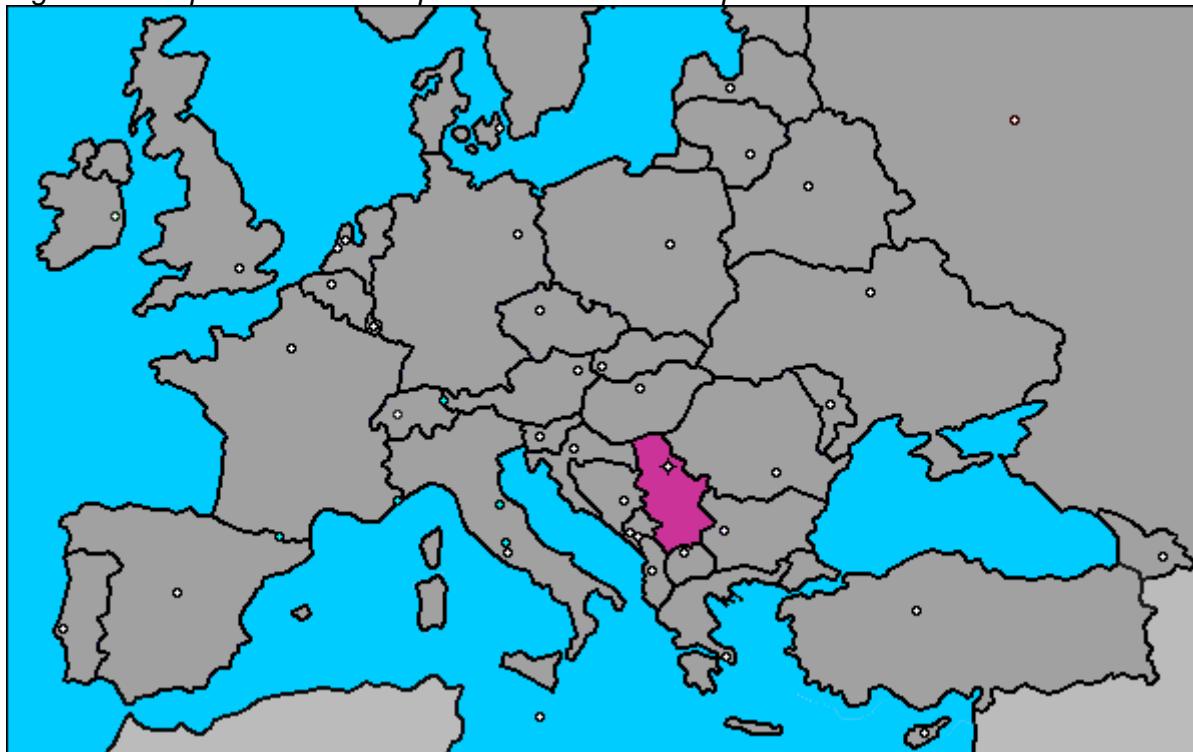
2. INTRODUCTION

2.1 Geographic Profile

Serbia is situated in the central part of the Balkan Peninsula in the South Eastern Europe. It covers the area of 88.361 km². The main climate type is mild-continental with four seasons yearly. The rivers of Serbia bring waters to the Black, Adriatic and Aegean seas. The northern part of the country is mainly filled with plains, while central and southern parts are hilly to mountainous. It is estimated that Serbia has ca. 55% of arable lands, 27% being forest. Fifteen mountain peaks pass over 2000m.

Pannonian basin, which with its southern parts belongs to Serbia, has the following geomorphologic parts: alluvial plains, river terraces, loess plateau and hills. The geological base consists of sand, gravel, silt mud and loess. The hills in northern Serbia have a varying geology: metamorphic rocks from the Triassic, Cretaceous and Pliocene mixed with posttertiary formations. The hilly-mountainous part of Serbia is characterized by even more heterogeneity, mainly consisting of the five huge ranges: Rhodopian, Carpathian, Balkan, Dinaric and Scardo-Pindic massifs. They are geologically distinctive and heterogeneous (from various type of metamorphic rocks, limestone, silicate, serpentines, etc.), and have an extremely high petrological diversity.

Figure 1: The position of the Republic of Serbia in Europe



2.2 Climate Profile

Climate in Serbia is also very heterogeneous due to its geographic position, orography, the presence of river systems, vegetation, etc.

Within the territory of Serbia various climatic types are represented: danubian type (eastern part), illyric type (western part), moesian type (central part), mountain-illyric type (western part), oro-mesian type (central, eastern part), mountain-submediterranean-adriatic type

(south-western part), mountain-submediterranean-aegean type (central-southern part), pannonian (northern part) and a few transitional climate types. The situation is even more complex when taking into consideration various meso- and microclimatic types, which are preconditions for high biodiversity rates, but also important factors in biodiversity conservation.

Climatic, orographic and geological heterogeneity of Serbia creates diversity of soil types as well. They are classified into few main types: automorphic (mainly zonal and climatogenic soil types), hygromorphic (developed by the water activities, mainly azonal), halomorphic (with high salt content, mainly intrazonal) and subhydric (developed on the bottom of the water basins).

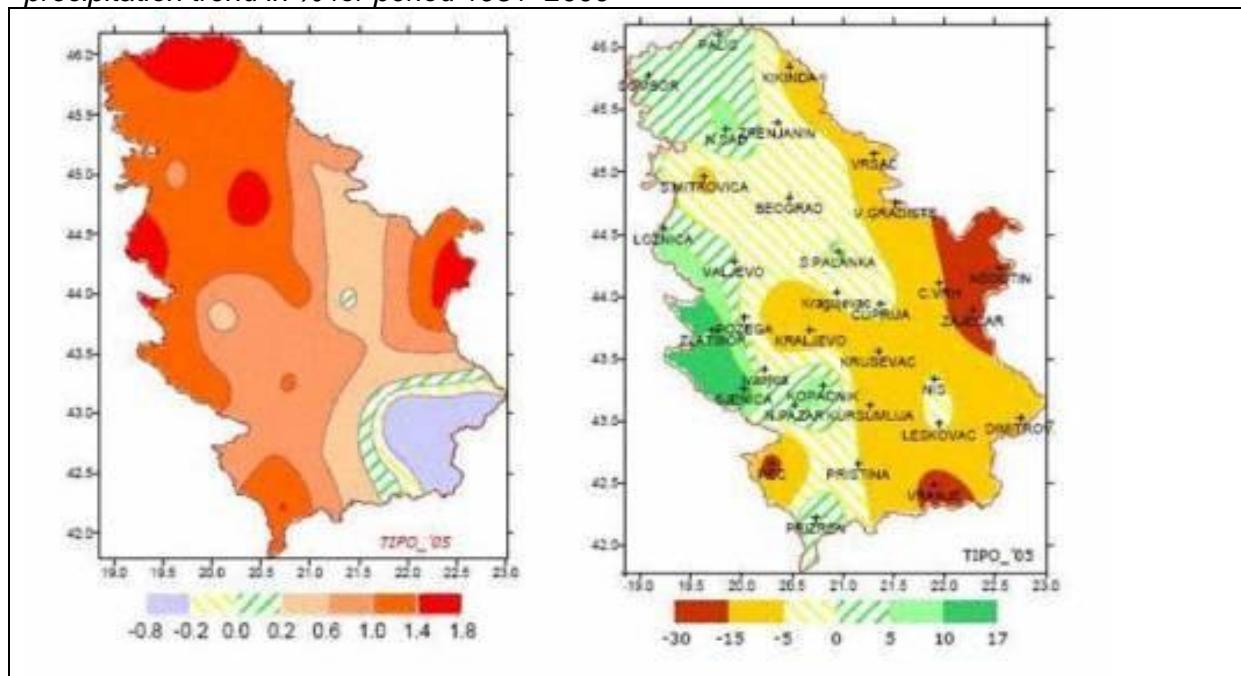
Average annual air temperatures vary with altitude. Areas at altitudes between 300 and 500m have an average annual temperature of around 10.0°C , and those of over 1000 m altitude around 6.0°C . July is the warmest month of the year with mean monthly temperatures in the interval from 11.0 to 22.0°C . The lowest temperatures are usually recorded in January, ranging between -35.6 and -21.0°C .

Serbia has a predominantly continental pattern of precipitation with higher amounts in the warmer period of the year. Most precipitation occurs in June and May, while February and October have the least. South-western Serbia has a Mediterranean precipitation pattern with maximums in November, December and January, and minimums in August. Snow cover is characteristic of the period between November and March, and sometimes even April and October, but snowfall also occurs in other months of the year in mountainous areas exceeding 1000m. January has the highest number of days with snow cover, accounting for an average of 30-40% of the total number of snowy days.

Annual solar radiation ranges between 1500 and 2200 hours annually.

Surface air circulation is mostly the result of orographic factors. In the warmer part of the year, winds from north-west and west prevail, while easterly and south-easterly winds, the so-called "košava", predominate in the colder period of the year. Winds from the south-western direction prevail in the mountainous parts of south-western Serbia.

Figure 2: Climate trends in Serbia, left: temperature trend in °C for period 1951–2004; right: precipitation trend in % for period 1951–2000



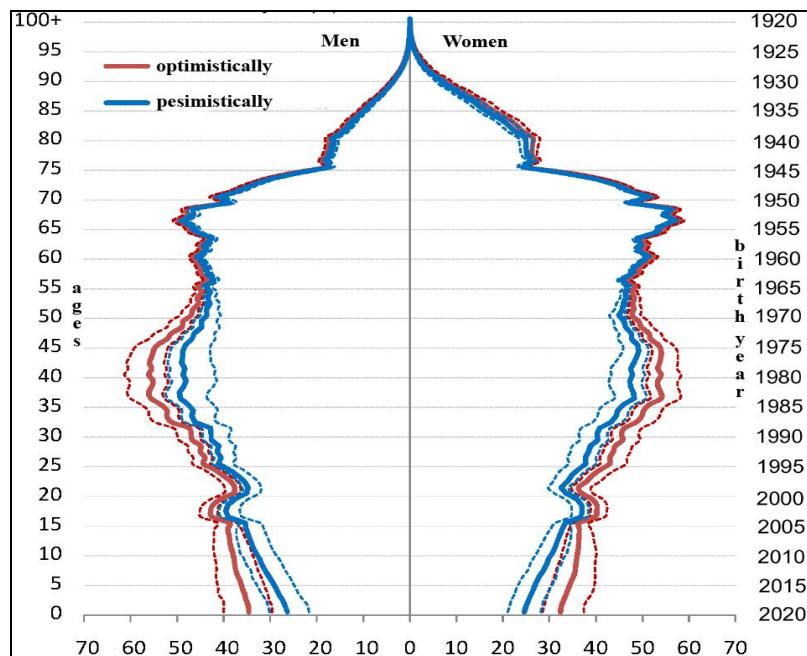
Source: Popović et al., 2007

2.3 Population Profile

The ethnic population of the Republic of Serbia is diverse as a result of the country's turbulent past. The majority of the population of Serbia is Serbs, but another 37 nationalities also live on its territory. Periodic population censuses in Serbia were performed in 1921, 1931, 1948, 1953, 1961, 1971, 1981, 1991 and 2002. The last 2002 census counted the population of Serbia at 7,498,001 excluding southern province Kosovo and Metohija and 9,981,929 including Kosovo and Metohija and refugees. Population growth rate was -0.739% in 2000 and is estimated to -0.468% in 2008. Estimation of age structure in 2000 is as follows: 0-14 years: 19.95% (male 1,028,355; female 963,366); 15-64 years: 65.22% (male 3,187,746; female 3,322,425); 65 years and over: 14.83% (male 638,204; female 841,833). Sex ratio in Serbia is at birth: 1.08 male(s)/female; under 15 years: 1.07 male(s)/female; 15-64 years: 0.96 male(s)/female; 65 years and over: 0.76 male(s)/female; total population: Serbia - 0.95 male(s)/female. Birth rate in 2009 was 9.19 births/1,000 population. Infant mortality rate: 20.13 deaths/1,000 live births in 2000 and 13.86 deaths/1,000 population in 2009. The average population density of population in Serbia is 111 individuals per square kilometer.

Urban population comprises 52% of the total population (2008). The rate of urbanization is a 0.5% annual rate of change (estimation for the period 2005-10).

Figure 3: Population structure in Serbia with estimation until 2020



Source: Republic Institution for Statistics (RZZS)

2.4 Economic Profile

At the end of 2000, Serbia embarked upon a process of transition towards market economy, which led to significant economic growth. Macroeconomic activity from 2001 until 2005 was characterized by introduction of sustainable macroeconomic stability as well as sustainable and stable economic growth.

After 2000, the country went through the economic liberalization, and experienced fast economic growth (GDP per capita went from \$1,160 in 2000 to \$6,782 in 2008). Furthermore, the country has been preparing for membership in the European Union, its most important trading partner. Estimated GDP (PPP) of Serbia for 2008 is \$78.83 billion which is \$10,679 per capita. At present, main economic problems include high unemployment rate (14%) and a large trade deficit (\$11 billion). Being the only European country with free trade agreements with the EU and Russia, Serbia expects more economic impulses and high growth rates in the coming years. In recent years, Serbia has seen an increasingly swift foreign direct investment trend.

3 THE BIODIVERSITY OF SERBIA

3.1 Overview

Biological diversity represents the variation of life forms within a given ecosystem, biome, territory or entire Earth. Following the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, the concept of "biological diversity" became the subject of an agreement under international law, namely the Convention on Biological Diversity. Biological diversity refers to the variability among living organisms of all origins. It comprises of both the diversity of ecosystems and species, as well as the genetic variety within species.

Serbia's status as a centre of biodiversity in Europe is to a high degree determined by its geological age, geomorphology, and climatic conditions and, in particular, by its role as refuge for a number of species during the glacial periods. Thus, the Balkan and Pannonian regions of the country harbor numerous endemic-relict floral elements from previous geological ages. Serbia hosts 39% of Europe's vascular plant species, 51% of its fish fauna, 74% of its bird fauna and 67% of all mammal species. Furthermore the country offers a resting place for many migratory species, including endangered ones. The total number of all species that live in Serbia represents 43.3% of all existing species in Europe.

3.2 Ecosystem and Habitat Diversity

The extensive range of ecosystems types in Serbia is largely the result of its geographic position, the influence of climate, relief and elevation variety.

Available data say that there are over 1000 plant communities and ecosystem types in Serbia. Serbia has a large biotic diversity (from north to south – steppic, broad deciduous forests, boreal forests, and tundra in high mountains). Beside climate-zonal vegetation, many extrazonal, intrazonal and azonal ecosystem types are present. There is also a rich diversity of aquatic ecosystems including river floodplains, lakes, wetlands, bogs, and mountain rivers.

Ecosystem diversity can be presented by the number of plant communities recorded in Serbia: approximately 1200 associations and some 500 sub-associations. Many of these communities express endemic, relic or both characteristics, which portray the importance and uniqueness of Serbian ecosystem diversity. According to the plant communities which define ecosystems, the following ecosystem groups can be mentioned: hydrophyllous, hygrophyllous, xerophyllous, mesophyllous and submesophyllous vegetations with plain and montane, subalpine, cryophyllous types, further halophyllous, psamophyllous vegetation and numerous types of broad-leaves and coniferous forest types.

Also, interesting ecosystems where no green plants can be found should be mentioned, such as the cave ecosystems which are numerous and under-explored in Serbia.

Annexes 1, 2 and 3 provide lists of habitats, their numbers and types.

3.3 Species Diversity

Serbia covers approximately 2.1% of the European continent; however, it hosts 39% of its vascular flora, 40% of Europe's bryophyte flora, 51% of fish fauna, 49% of reptiles and amphibians fauna, 74% of bird fauna and 67% of mammal species.

Having in mind that a lot of wildlife and plants discovered their habitat in this area during periods of glaciation in northern Europe, it is not surprising that Serbia has numerous relic species diversity as well. Serbia, due to its position, also has a rich endemic species (Balkan endemics – 8.06% or 287 species, local endemics - 1.5% or 59 species).

On the other hand, Serbia is, even on a world scale, a wintering, resting and nesting/breeding ground for migrating animals on their passage from the north and south and the opposite in the autumn/spring time and on their going and return migratory journeys (e.g. migratory birds, bats).

Species diversity by groups	Serbia (*with Montenegro)	Internationally significant species present in Serbia
Macromycetes	625	73
Lichens	586	8
Freshwater algae	ca. 1400	13
Bryophytes	631	37
Vascular plants	3662	243
Rhizopoda*	236	11
Rotatoria*	326	4
Nematods*	327	5
Oligochaets*	77	?
Earthworms*	79	12
Mollusks*	ca. 400	77
Claadocera*	91	6
Copepods*	72	8
Amphipods	33	12
Opilions*	66	9
Pseudoscorpions	ca. 200	35
Mites*	1237	280
Insects	ca. 35000	198
Fishes	110	19
Amphibians and reptiles	132	31
Birds	382	350
Mammals	96	3

** There is a variety of groups of organisms mainly microorganisms and lower life forms for which there are no data for Serbia

In Serbia some 44,200 taxa of living organisms were recorded. However, due to many under-records, taxonomical problems and ignorance of many groups, the number of species diversity is estimated to 60,000 recent taxa. More detailed lists are provided in Annexes 4 and 5.

3.4 Genetic Diversity

Genetic resources of biodiversity in Serbia can be estimated as rich since there are numerous varieties, sorts and types of autochthonous populations of all plants, animals and microorganisms. However, the exact data for most of the organisms are still missing.

The potential of genetic diversity in Serbia is usually marked in forests and natural grasslands. The data on genetic diversity are available for certain forest trees, namely *Picea omorika*, *Picea abies*, *Pinus nigra* and *Acer heldreichii*. Large genetic resources are present

in endemic and relic species like *Pinus peuce*, *Pinus heldreichii*, *Pinus nigra* ssp. *gocensis*, *Taxus baccata*, *Prunus laurocerasus*, *Fraxinus pallisae*, *Corylus colurna*, *Daphne blagayana* etc.

As autochthonous genetic resources, large values are estimated within native grassland species *Alopecurus pratensis*, *Arrhenatherum elatius*, *Festuca pratensis*, *Dactylis glomerata*, *Phleum pratense*, *Poa pratensis*, *Lotus corniculatus*, *Trifolium* spp. and others.

Certain data on the genetic distinct populations of bryophytes diverging from other European ones are present for European rare and endangered species *Hilpertia velenovskyi*. European widely but scattered distributed moss *Rhytidium rugosum* has a very geographically differentiated genetic structure, while the liverwort *Metzgeria furcata* fits well genetically into European lineages.

Large potentials also come out of medicinal plants native in Serbia (*Achillea* sp., *Chamomilla recutita*, *Mentha* sp., *Salvia* sp., *Urtica dioica*, *Valeriana officinalis*, *Primula* spp., *Thymus* spp., *Hypericum* spp., *Plantago* spp., *Gentiana* spp., *Teucrium* spp., *Centaurium* spp. and others).

In Serbia, there are over 1200 sorts of agricultural plants: ca. 80 annual and perennial, over 740 cereals, over 170 industrial plants, over 70 sorts of forage crops, over 120 vegetable sorts, over 40 fruit sorts, over 50 grape vine sorts and 6 sorts of horticultural and medicinal plants.

On the other hand, the domesticated animals lost genetic potential due to the increase of production in certain sorts. Some sorts are already extinct or almost extinct: two pork sorts, one cattle sort and many sorts of poultry. More targeted action is needed to keep important and maintaining not only certain species, but various genetic features of the diverse organisms also as potential resources (detailed list provided in Annex 6).

3.5 Protected Areas

Currently, 5,86% of the territory of the Republic of Serbia is under some protection regime (518.204 ha). The total number of protected areas are 463 (5 National parks, 16 Nature parks, 16 Landscapes of extraordinary characteristics, 72 Special nature reserves, 312 natural monuments and 42 areas of cultural and historic values). As natural rarities, 429 animal and 215 plant species are protected in Serbia. The protected areas undergo special regimes of protection from the most severe (I) until not severely protected with possibility of sustainable use of resources (III). However, there are also protected areas which still are not under any protection regime. There are 9 Ramsar sites in Serbia with total area of 55627 ha (0,63% of total territory): Obedska bara, Ludasko jezero, Stari Begej-Varska bara, Slano kopovo, Gornje podunavlje, Zasavica, Vlasina, Labudovo okno and Pestersko polje.

Nature park Golija represents is designated as the UNESCO Biosphere Reserve Golija-Studenica.

Figure 4: Protected areas in Serbia



Source: Institute for Nature Protection of Serbia

In 1995, European environmental ministers supported the Pan-European Strategy of Biological and Landscape Diversity, which was the basis for the establishment of the Pan-European Ecological Network (PEEN). The aim of this network is to provide long-term conservation of ecosystems, habitats and species of importance for protection at the European level. The base for the establishment of such networks is provided through a relevant database on the endangerment status and distribution of plant and animal species throughout Europe. PEEN stipulates existence of a central zone, which would be made of Natura 2000 and Emerald areas. It also stipulates existence of corridors that connect central zones and enable migration and dispersion of species, as well as transitional zones and recovery areas, which would be under lower degree of protection than the central zone. It is becoming clear that endangered species cannot be protected only by forming isolated nature reserves.

Protection and conservation of nature are among most important parameters of Serbia's future development within the EU accession process. Natura 2000 is a network of protected areas, which obliges every EU member state to provide adequate status for endangered species and habitat types at its territory, as stated in the Appendices of Birds Directive and Habitat Directive, which in practice implies adequate management in these areas. Taking into account that Serbia aspires to the European integrations, establishment of Natura 2000 network is, without any doubts, a strategic priority in protection of biological diversity. In addition to legal and institutional frameworks, which have been defined, key elements of the establishment of Natura 2000 ecological network are seen in the following: definition of subjects in charge of the Natura 2000 areas management; identification of process initiators; organizational structures; definition of stakeholders, responsibilities and functions to be

performed by certain institutions; necessity for the establishment of new institutions; implementation of management plans, etc.

The Emerald Network is an ecological network which comprises Areas of Special Conservation Importance (ASCI), i.e., spatial wholes and habitats of special national and international importance from the biological diversity conservation aspect. The project on establishing the Emerald network was launched by the Council of Europe, as a part of its work under the Bern Convention, or The Convention on the Conservation of European Wildlife and Natural Habitats. This Convention, adopted in 1979 (ratified by Serbia), regulates protection of endangered plant and animal species and certain types of habitats. Sixty-one areas in Serbia have been nominated for the Emerald ecological network. The nominated areas are particularly important for protection and conservation of wild plant and animal species and their habitats. The Emerald network is based on the same principles as the Natura 2000 network and is formally seen as preparation for the implementation of the Habitat Directive. Taking into account that new EU member states, as well as other countries with accession yet to come, they are obligated to submit a list of proposed areas for ecological network Natura 2000 with an appropriate database. The implemented Emerald project in Serbia provides direct support to the achievement of this goal.

Sixty-one sites in Serbia have been designated as Important Plant Areas - IPA, 42 as Important Bird Areas – IBA (total area of 12596 km²) and 40 as Prime Butterfly Area (total area of 9036 km²) sites.

There are more than 30 managers of protected areas in Serbia, ranging from public enterprises to local nongovernmental and tourist organizations, private sector and even church and military. An overview of protected areas and their managers is provided in Annexes 7 and 8.

3.6 Economically important species

In Serbia over 700 species of medicinal plants are known, out of which some 400 are officially registered and 280 are the subject of trade. One hundred and fifty two plant species are legally protected from use and trade and these species are the subject of collecting control. In the forest sector, economical importance has 282 species of trees and shrubs. In addition, it should be noted that there is a large potential of plants (ca. 180 melliferous species) and ecosystems for honey production and as habitats for pollinators that are used in agriculture.

The fungi represent the group of organisms that the population has difficulties establishing control and estimates. Some estimates say that there is an extensive collection of fungi in Serbia (1,395 tons per year). Collected are species from the genera *Agaricus*, *Boletus*, *Morchella* as well as rare and expensive *Tuber*.

Hunting incomes are made mainly from 12 species of mammals and 7 bird species that have economical importance as game species. Twenty-nine species of freshwater fish have economic value including pike, carp, zander, sturgeon, and perch. For many local communities the utilization of biological resources continues to be important for their nutritional well-being and economic health. Many others species, including a large amount of microorganisms, have a great importance for different economic sectors. In total, 122 wild species of plants, fungi and animals are under strict control of use and trade. The quotes for collecting are adjusted yearly. Some of these species are of relic character and the main threat is over-collecting.

4 THREATS TO BIODIVERSITY IN SERBIA

4.1 Overview

Although Serbia is rich in biodiversity, the country has suffered a progressive loss of biodiversity as a result of human activity. In particular, agriculture, industrial development, urbanization, forest extraction, hunting, fishing, energy and mining, transport and tourism are the sectors that have impacts on the biological diversity. Also, uncontrolled pollution, alteration of river courses and hydrotechnical works, mineral resource extraction and overexploitation of biological resources are also significant endangering factors.

4.2 Pollution

Air, water and soil pollution have been continuous major threats to biodiversity in Serbia. Industrial pollution decreased in the last years of the economic transition process due to significant reductions in industrial activities. Agriculture runoff is also a major pollutant factor in some areas. Part of the interior waters which could sustain a rich biological diversity is polluted.

Figure 5: Main air pollution hot spots in Serbia



Source: SEPA

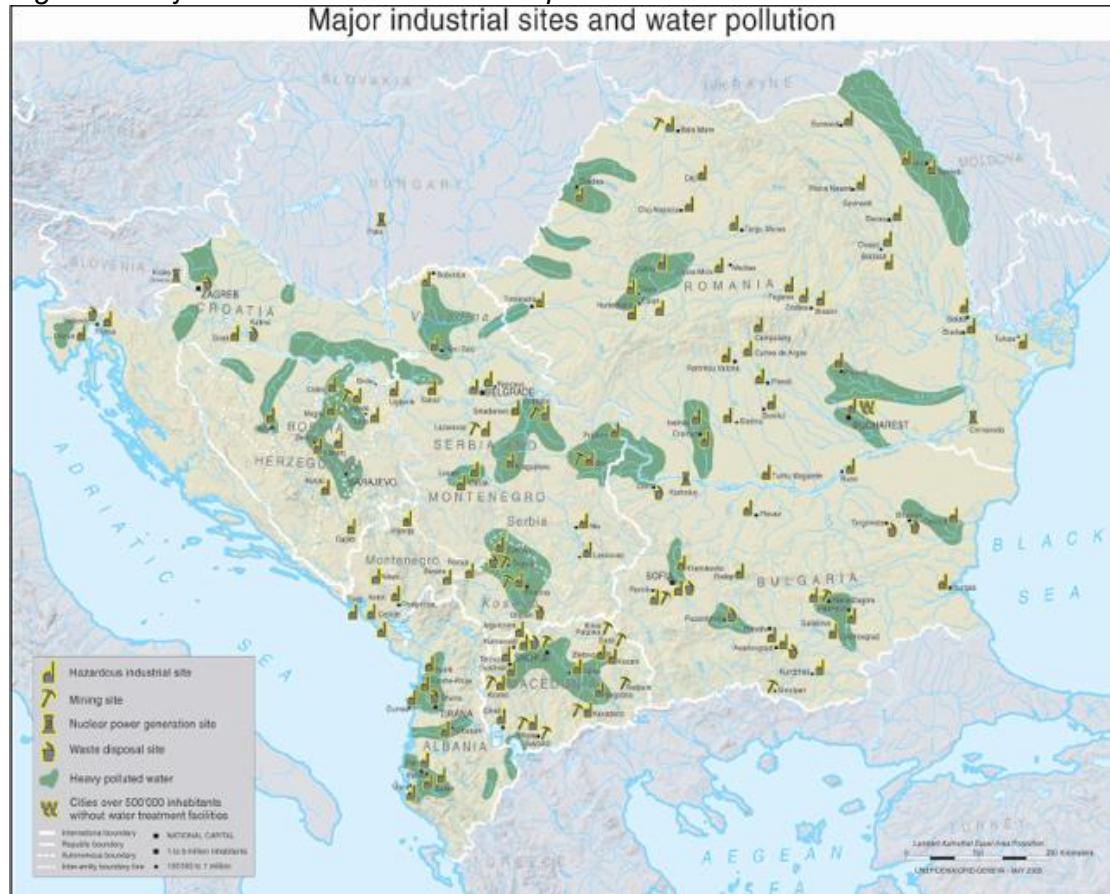
Figure 6: Concentration of pollutants in air per year

Town	SO ₂	Soot	NO ₂	TDM
Belgrade	7 – 10	29 - 57	32 – 36	146–312
Niš	6 – 10	8 – 41	11– 28	169 –244
Novi Sad	21 - 30	9	3 – 8	156-180

Source: Institute for Public Health

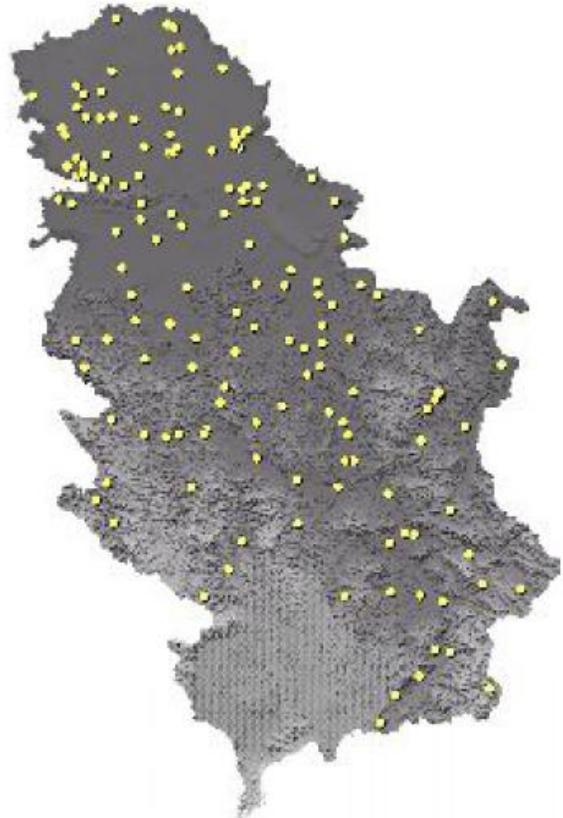
Surface waters in Serbia are seriously endangered by various sources of physical, chemical and biological pollution. The deterioration resulted from the development of heavy industry and an increase of urban areas and increasing communal and industrial wastewaters. The irresponsible discharge of high concentrations of organic and inorganic pollutants over a period of years led to the total or partly deterioration of riverine ecosystems.

Figure 7: Major industrial sites and water pollution



Source: ENVSEC

Figure 8: Location of waste deposit in Serbia



Source: MISP-SERBIA

Soil pollution in Serbia is extensive and represents a serious threat to biodiversity. There are several distinct sources of pollution:

- Industry and mining (through atmospheric emissions and wastewater – primarily from heavy metals)
 - Use of pesticides and fertilizers (persistent organic compounds)
 - Improper disposal of wastes (toxic organic substances)
 - Transportation, especially exhaust gases from fairly old vehicles (heavy metals, sulphates, nitrogen oxide)
 - Trans-border pollution etc.

The regions of heavy pollution are mainly around industrial centers with pollutants concentration overlapping in between or decreasing from the sources. Bio-monitoring is carried on sporadically, if at all.

Since the contaminant deposits reach the soil through the air these two segments are in direct relationship. The regions of the country with the highest amounts of soil pollution are also the same as those characterized by high amounts of air pollution (this also includes agricultural regions, with air pollution primarily coming from volatile toxic compounds, ammonia, nitrates, phosphorus etc). The most frequent pollutants in the air of urban or industrial centers are SO_x, NO_x, CO_x, chloro-fluorocarbons (CFCs), smoke and microdust (<10 µm), which is breathable and also has high concentrations of heavy metals.

Lately, it has become more evident that there is a presence of enriched uranium in some ecosystems, including key ecosystems such as high mountain ecosystems. These are remnants from the NATO bombing in 1999.

4.3 Environmental changes

Continuous migration of people from rural to urban areas and this increasing concentration of the population in the centers of the city represents a serious problem not only from a global socioeconomic aspect, but from a spatial aspect as well, thus creating pressure on the environment. On the other hand, the rural areas remain abandoned with the overall result being a loss of productive land, and more natural areas are being converted and used for agricultural purposes.

4.3.1 Consequences of the land use

The main consequences of land use are reflected in erosion, caused by rain washing in hilly areas or eolic, which is the case in northern Serbia (AP Vojvodina). Extensive use of land requires the extensive use of fertilizers especially chemically synthetic ones, which cause the changes not only in the agricultural ecosystems itself, but also in the neighboring ecosystems, especially affecting the biodiversity in waters and soils. Once abandoned, the used land takes a long period to recover potentially native vegetation.

The other problem in land use is overgrazing in some areas, which also reduces soil resources and contributes to the loss of biodiversity and to erosion, especially in sloppy areas.

Figure 9: The trends in agriculture surface use in Serbia

Year	Total agricultural land	Used surfaces (x1000 ha)					Pastures	Fish pools, rushes and ponds
		Total	Cultivated surfaces and	Orchards	Vineyards	Meadows		
2000	5109	4259	3356	245	71	587	815	35
2001	5111	4255	3355	243	69	588	821	35
2002	5107	4255	3351	245	69	590	817	36
2003	5115	4253	3345	246	67	594	826	36
2004	5113	4252	3344	244	66	598	823	38
2005	5112	4242	3330	239	64	609	832	38
2006	5105	4228	3318	238	62	610	838	39
2007	5092	4218	3299	240	59	620	835	39

Source: Eastagri

Figure 10: The trends of pesticides and chemical use in agriculture in Serbia

Year	2004	2005	2006	2007
Pesticides and chemicals used in agriculture in Serbia (in tones)	7774	5805	6157	7418

Source: Eastagri

There are no systems to control and monitor land used by plant and animal breeders. Another problem in Serbia is arising from the surface mining activities as large areas of waste land remain afterwards and so far there has not been a systemic approach to this problem.

Figure 11: Forest resource and land use for wood energy

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2008
Forest	2,313	2,460	2,476	2,713
Other wooded land	287	521	521	410
Other land	6,146	5,765	5,749	5,623
...of which with tree cover	272	257	256	75
Inland water bodies	90	90	90	90
TOTAL	8,836	8,836	8,836	8,836

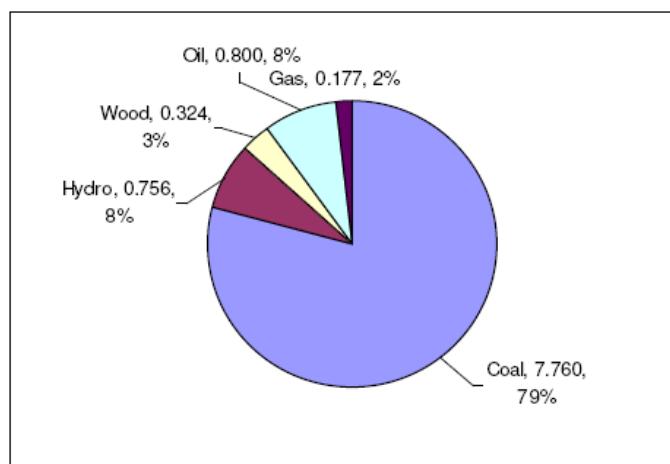
Source: EBRD renewables

4.3.2 Consequences of the resource use

Traditional harvesting and grazing practices in Serbia present an opportunity to support a rural population living within the limits of the available biological resources, especially within or in surrounding of protected areas. Tourism could be developed to provide such communities with additional sources of revenue, while offering incentives to retain or revive traditional practices that are sustainable or to develop new means for using natural resources sustainably. There is a great potential to develop ecological tourism activities in many of Serbia's natural areas.

On the other hand, Serbia faces many changes as it moves towards a market economy. As the country's economic wealth grows in the future, new environmental pressures and challenges will certainly arise. The private ownership of land, rises in personal consumption and the manufacturing of consumer goods, the privatization of industry, will bring both new threats as well as new opportunities for the protection of biodiversity.

Figure 12: Structure of resources for primary energy production in Serbia in 2008.



Source: MAFWM-Directorate for Forests

On the basis of an evaluation of the impacts of climate change on biodiversity, the horizontal and vertical distribution of plant and animal species is changing (i.e. migration toward the north and/or migration to higher elevations). Such changes will particularly affect the relict plant and animal species living in high mountain zones. Within these zones, many refugial

phytocenoses are present which would be endangered by temperature increase and by the accompanying decreases or distributional changes in precipitation.

With an increase in temperature of 3.2°C over the next 100 years, even the highest peaks would suffer higher mean annual temperatures on par with the current temperatures in the higher subalpine zones (i.e., the zones of species distribution would migrate upward by 500 m), so that alpine pastures would be expected to disappear completely on some mountains. In contrast to the alpine pastures, the thermophilic communities would suffer devastation and some species even desertification. Other climate-zonal communities would experience changes in their areal and elevational distributions, depending on the rate of advancement of changes caused by climate.

Currently, the Government of Serbia is taking steps to implement the provisions of the UNFCCC and the Kyoto protocol; however, activities that would determine the impacts of climate change on biodiversity are still missing.

Figure 13: Wood energy production and use in Serbia

Wood energy supply	Unit (m ³ /metric tonnes)	Annual or average
<i>Firewood</i>	2,119,100 m ³	34%
<i>Charcoal</i>	24,500 m ³	-
<i>Bark</i>	119,400 m ³	2%
<i>Wood chips, Sawdust</i>	526,100 m ³	9%
<i>Biofuel briquette and pellet</i>	102,700 m ³	2%
<i>Black liquor</i>	nda	nda
<i>Recovered construction wood</i>	nda	nda
<i>Others:</i>		
<i>Woody biomass outside forests</i>	7,300 m ³	-
<i>Forest residues</i>	552,800 m ³	9%
<i>Undefined (fuelwood obtained on illegal logging, etc)</i>	2,722,100 m ³	44%
Total	6,174,000	100%

Source: MAFWM-Directorate for Forests

Figure 14: Forest sources and land use for wood energy

Region	Assortment Structure	State forests			Private forests			TOTAL (m ³)
		Deciduous forests	Coniferous forests	Total (m ³)	Deciduous forests	Coniferous forests	Total (m ³)	
SERBIA TOTAL	Technical wood	891.002	275.592	1.166.594	467.223	333.128	800.351	1.966.945
	Fuelwood	974.025	0	974.025	1.102.802	0	1.102.802	2.076.827
	Wood residues	207.224	37.581	244.805	248.861	58.787	307.648	552.453

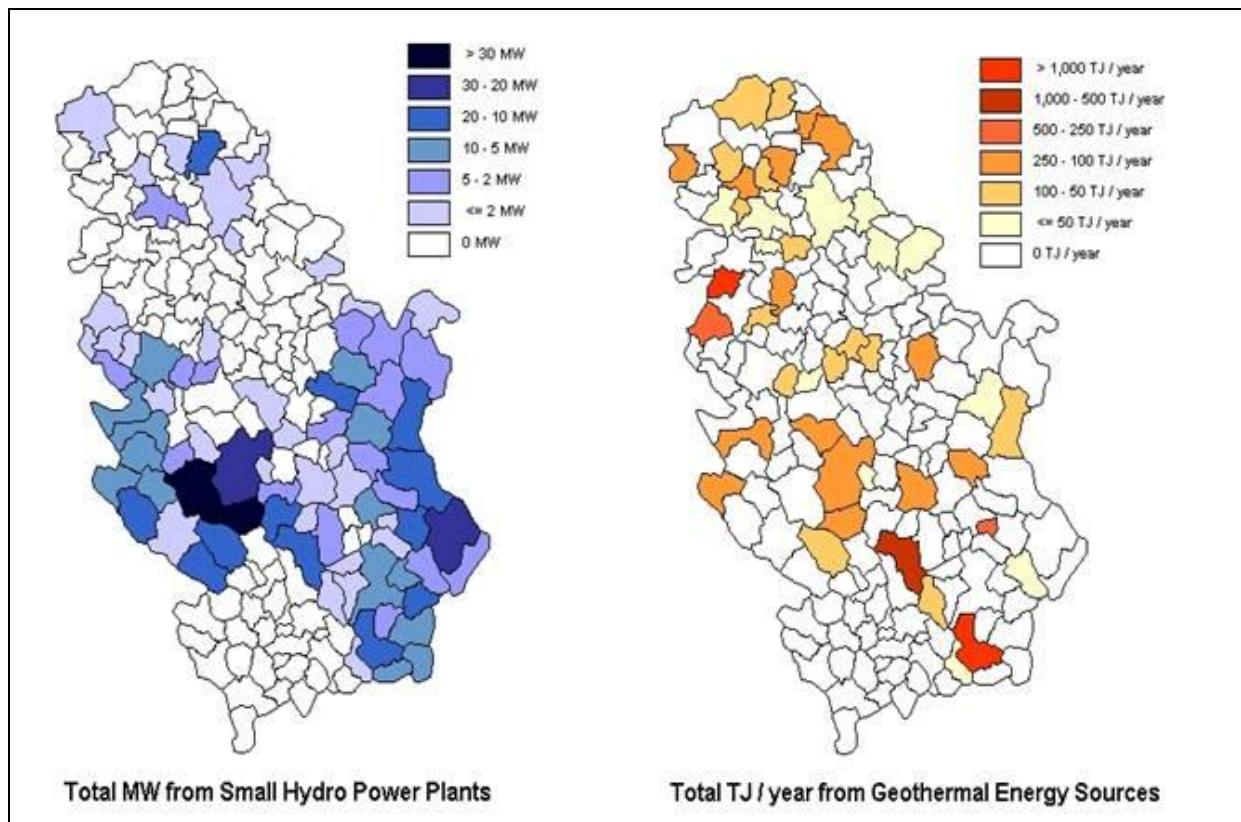
Source: MAFWM-Directorate for Forests

4.3.3 Human influence on the landscape

Human influence on landscape and so on biodiversity can be linked with main human activities: agriculture, forestry, hunting, fishing, energy, transport and tourism.

Total agricultural land in Serbia covers 64.86% of the territory and arable lands are 55.06%. Pastures and hay fields are present with approximately 20% of agricultural lands. The main threats in this area are: native habitat destruction, extended and over-exploitation, effects to native ecosystems of the use of agro-chemistry and agro-machinery. The area of wetlands has also been significantly reduced. The loss of wetlands has been particularly dramatic along the Danube, Sava and Morava rivers where many wetlands have been converted to agricultural lands.

Figure 15: Potentials of renewable energy production and sources in Serbia



Source: Minstry of Mining and Energy

Figure 16: Planned production and potential of Renewable Energy in Serbia in 2009

Production (toe)	
Geothermal energy	4,700
Large Hydro	923,000
Small Hydro	4,300
Biodiesel	300
Fuel wood	163,000
TOTAL	1,095,300

	Potentials (Mtoe)
Biomass	2.40
SHPP	0.40
Solar	0.64
Geothermal	0.20
Wind	0.19
TOTAL	3.83

Source: Minstry of Mining and Energy

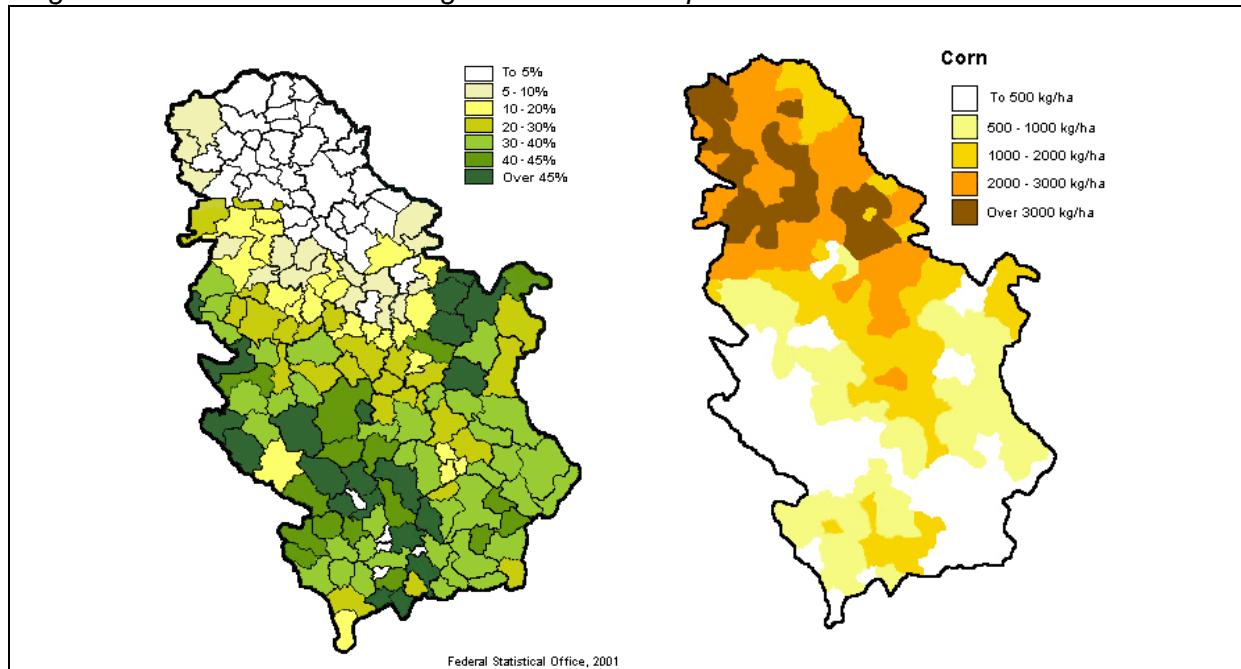
Various types of forests cover approximately one third of the country's territory. Lately the forestation of Serbia slightly increased, but exploitation and cutting of old-growth forests and ecologically climatogenic stands are in threat. However, in Serbia there are still good forest ecosystems both within and out of protected areas. Some stands have retained a high level of natural species composition and quality.

Figure 17: Ratio of wood sources used for energy in Serbia

	State forests (m³)	Private forests (m³)	Total (m³)
Serbia	2,385,424	2,210,801	4,596,225

Source: 2009 MAFWM-Directorate for Forests

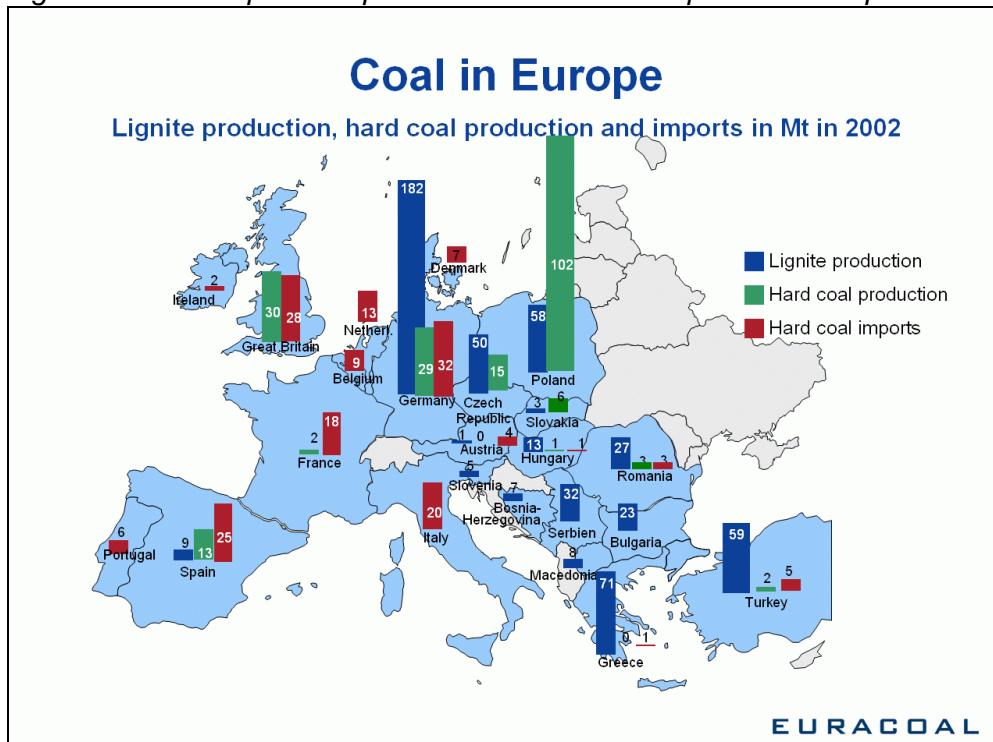
Figure 18: Wood biomass and agriculture biomass production in Serbia



Source: Ministry of Mining and Energy

Serbia is an energy dependent country whose energy production is developed, but does not satisfy the country's needs. Since the strategic interest of Serbia is to become energy independent and given that there are potentials to increase production, the pressure from this area on biodiversity is expected to increase. Besides direct habitat destruction, the pollution of waters, air and soils are the main consequences from energy sector development. Indirectly, the energy sector produces a lot of waste deposition, which also impacts biodiversity.

Figure 19: Coal import and production in Serbia compared to Europe



Source: European Energy Forum

In Serbia, there are 323 hunting stands. The hunting is controlled and does not cause significant damages to the populations of hunting wildlife (deer, roebuck, wild boar, chamois, fallow deer, mouflon, rabbits, partridge). The main problem in this area remains poaching, and its control. Some 196 bird species are prohibited from hunting permanently.

Twelve fish species out of 98 species recorded in Serbia are subject of economically based fishing, while the others are not subject to fishing; their population is rather collaterally damaged. The main threats in this are: lack of water registry and monitoring of fish populations, inadequate control of fisheries, and use of prohibited fishing tools, poaching, allochthonous species introduction, water pollution and draining of waters for other purposes especially areas where fish spawn take place.

The transport system in Serbia is irregularly developed and the increase of this sector is expected in the coming years. The negative effect to biodiversity is further expected by direct and indirect habitat destruction and fragmentation as well as by pollution.

The tourism in Serbia is increasing and the highest pressure to biodiversity are visible in fragile and localized high-mountain ecosystems where more and more construction for winter sport tourism is taking place. There are more and more initiatives for rural tourism and ecotourism, which combine tourism, rural development and nature protection.

5 LEGAL, POLICY AND INSTITUTIONAL FRAMEWORKS FOR BIODIVERSITY CONSERVATION IN SERBIA

5.1 Overview

Serbia has demonstrated its interest in, and commitment to the conservation of biodiversity and natural areas through the ratification of international agreements, the adoption of a national legal framework and the establishment of a large number of protected areas. Despite these efforts, Serbia has experienced difficulties in implementing policies and

strategies to achieve effective biodiversity conservation. Beside a lack of financial resources, there is a lack of appropriate institutional structures for biodiversity conservation.

Serbia had the first legislative on nature conservation in 1349 (Dusan's legal code, article 123 on forest cut prohibition and plantation of the new forests). In 1412, Despot Stefan proclaimed the first Law on Mining that regulated property and use. In 1840, the first rule on fauna protection was established, the so called "Visocaja Naredba" prohibited hunting of deer and hunting closed season on rabbits, "wild goats" and birds. The first area completely protected in Serbia was Obedska Bara, which was established as a protected area in 1874, and the first natural assets protected in Serbia were forest reserves Ostrozub, Mustafa and Feljesanain in 1948. The first national park was established in Serbia in 1960 – National Park Fruska Gora.

Today, there are 1032 protected natural assets in Serbia or more than 6% of Serbia's total territory and the Government set a target of protecting 11% by the end of 2010.

Even though there are numerous scientific and research institutions in Serbia, biodiversity scientific research is largely uncoordinated and data and information that is collected is not easily accessible often even inaccessible.

5.2 Institutional and Policy Framework

The **Ministry of Environment and Spatial Planning (MESP)** has the overall responsibility to ensure that environmental protection systems are in place and to ensure the sustainable use of natural resources (air, land, minerals, fish, flora and fauna species). MESP is responsible for the preparation of strategic documents, plans and programmes in the area of environmental protection. The Ministry has the overall responsibility for the harmonization and implementation of environmental legislation in the Republic of Serbia and is currently focused on the EU approximation. The MESP has the following responsibilities and competencies in the field of nature protection: protection and preservation of biodiversity, protection and preservation of protected areas, protection, improvement and sustainable use of ichtiofauna, permits for internal and international transportation of endangered and protected wild flora and fauna, implementation of international conventions and environmental and sustainable development related inspection.

Secretariat for Environmental Protection and Sustainable Development of the Autonomous Province of Vojvodina has an important role at the regional level and is in charge of nature protection of the Autonomous Province of Vojvodina territory.

The **Institute for Nature Protection (INP)** of the Republic of Serbia plays an important role at the level of the state and of the autonomous province. This state institution is responsible for professional control, support, protection and improvement of Serbia's natural heritage and its biological and geological diversity. The Institute for Nature Protection, has competences in the protection of protected areas such as parks, nature reserves, wild flora and fauna habitats, and is also responsible for overseeing the use of these natural resources. The INP assists the Ministry of Environment and Spatial Planning (MESP) in assessing new protected areas and making recommendations for the establishment, planning and management of protected areas. The INP maintains significant technical and institutional capacity for biodiversity conservation. Biodiversity monitoring is among the responsibilities of the Institute for Nature Protection and is focused on protected areas and species. The INP delivers data on bio and geodiversity and the state of natural resources to the MESP and other relevant institutions. It produces a number of publications and a quarterly bulletin. In cooperation with European Environmental Agency, the INP operates as a national reference centre and has been the main implementation institution for the Emerald Network project for including Serbia

in the Natura 2000 programme. The Institute for Nature Protection has completed a GIS survey of protected nature areas.

Based on the Law on Determination of Competences of the AP Vojvodina from 2009, AP Vojvodina established the Provincial Institute for Nature Protection through its authorities, in order to perform the activities on nature protection and protection of natural goods that are located on the territory of AP Vojvodina.

Next to the MESP and the Institute, certain nature protection competencies and responsibilities are within the following institutions:

The Ministry of Agriculture, Forestry and Water Management (MAFWM) - Forestry Department (Forests and Hunting), Plant Protection Department and Veterinary Department (controlling cross border transport of endangered and protected wild flora and fauna). The responsibility of the Directorate of Forests includes the preparation of forest management plans which contain specific and appropriate guidelines for particular protected areas as well as inspection and supervision in forestry issues. The mandate of MAFWM covers Genetically Modified Organisms (GMOs), work on the Implementation of Cartagena Protocol, Biosafety Clearing House, Organization of National Committee for Biological Safety, registration and protection of plant varieties, genetic resources, laboratory accreditations, phytosanitary inspectorate, as well as control of quality of food and animal food.

Ministry of Science and Technology under its programme provides financial support for fundamental and applicative research in biology and biodiversity as well as in the area of biotechnologies.

Other ministries with responsibilities related to the environment and nature protection include the **Ministry of Economy and Regional Development** (including industry), the **Ministry of Health** (including enforcement of sanitary regulations relevant to the environment), the **Ministry of Infrastructure** (road, air, rail and water traffic), and the **Ministry of Energy and Mining** (including energy efficiency, approval for extraction of mineral resources other than underground water, and renewable energy sources).

The **Serbian Environmental Protection Agency (SEPA)** is responsible for data collection and reporting on the status of biodiversity. Established in 2004, under the MESP, with main responsibilities to develop, harmonize and manage the national environmental information system (especially regarding the status of environmental media) and develop a register of polluters, to collect environmental data and report on environmental conditions and environmental policy implementation, to develop procedures for processing and assessing environmental data, to update data on the Best Available Techniques and practices to support IPPC, and to cooperate with and report to the European Environmental Agency (EEA) and the European Environment Information and Observation Network (EIONET).

The **Fund for Environmental Protection** has been established as a general fund for the environment but has a mandate to include biodiversity conservation and protected areas in its financing objectives. The Fund was established under the MESP by the 2004 Law on Environmental Protection. The fund generates revenues from different environmental taxes and some fees. Additionally, revenue can also come from the resources collected from privatization, bilateral and multilateral cooperation and different donations. Almost 90% of the fund resources are collected from taxes while the rest is transferred from the general government budget. The fund distributes its financing based on a specific standard that prescribes both uses and reporting criteria.

Other institutions that have a role in nature protection include public enterprises managing Tara, Djerdap, Kopaonik, Fruska gora and Mountain Sara National Parks, Public Enterprises Srbijasume and Vojvodinasume as well as other protected areas managers listed in Annex 7.

Policy framework related to nature conservation includes several strategies and policy documents:

The **National Strategy for the Accession to the European Union** adopted in 2005, is among the strategic documents with impact on the overall national policy in the future and is of major importance for the policy of sustainable development.

The **Poverty Reduction Strategy for Serbia** pays attention on environmental aspects of poverty reduction through the concept of getting an income in changed conditions and obtaining higher support on a local level.

Also, the Government of Serbia adopted the **National Strategy for Sustainable Development** in 2007. As the most important nature conservation objectives, this Strategy identifies drafting a relevant legislation, ratifying international agreements on biodiversity and conservation, enlarging the network of PAs, establishing ecological corridors and network of ecologically important areas, establishing an effective system of biomonitoring and information systems on wildlife and other rare species, and developing a registration system for biological diversity in Serbia.

The **National Environmental Protection Program (NEPP)** is the fundamental strategic document for environmental protection in Serbia. The document identifies the key environmental policy objectives as short-term policy objectives (2010-2014), ongoing policy and long-term policies and instruments (2015-2019) for the achievement of the identified policy objectives.

The **Spatial Plan of the Republic of Serbia** was adopted in 1996 and later replaced with Spatial Development Strategy of Republic of Serbia, defines basic goals in the field of nature conservation and environmental protection. One of these goals is that, by 2010, 11% of Serbian territory should be under some type of protection.

The **Forestry Development Strategy of the Republic of Serbia** refers to the protection and conservation of forest areas. This strategy emphasizes that improving the designation, conservation and management of PAs is of strategic importance for Serbian nature conservation policy, requiring "harmonized development of the ecological, economic, social and cultural forest functions".

The process of preparation of **National Strategy for Sustainable Use of Natural Resources and Goods** is ongoing and it is expected that this Strategy will be adopted in 2010.

The **Biodiversity Strategy and Action Plan (BSAP)** is currently being developed and is expected to be adopted during 2010.

5.3 Legal Framework

In addition to the above mentioned specific strategies and plans, nature conservation in Serbia is regulated directly by the 2009 Law on nature protection and indirectly by several laws, e.g. bylaws, and directly by specific provisions of certain legal acts. Altogether there are more than 130 different regulative norms applicable. Protection of environment and nature protection is in process of harmonization with regulations of the European Union. In May 2009, the Government adopted 16 laws related to environment and nature protection and made a great progress in its EU accession process.

All activities in the area of nature protection are regulated with the following set of laws and subsidiary legal documents:

Constitution of the Republic of Serbia ("Official Gazette of RS", No. 83/06). The Constitution declares that citizens have the right to a healthy environment and the right to be informed about the state of the environment, but also a responsibility to protect it.

Law on environmental protection ("Official Gazette of RS", No. 135/04, 36/09). This Law defines criteria and conditions for sustainable use and protection of natural resources and assets, covers environmental protection of air, water, land, soil, forests, protected natural areas and national parks, and protection against waste, ionizing radiation, noise and vibrations, defines measures and conditions for environmental protection (prevention). The Law also defined conditions for operation of facilities and installations, environmental quality standards and emission standards (ambient and emission limit values), bans and limitations; environmental management systems, standards for technologies, products, processes and services, environmental labeling, remediation measures, systems for issuing environmental permits and approvals, hazardous substance protection measures (production, transport and handling), environmental monitoring (monitoring and information systems), and policy regarding fines.

Law on nature protection ("Official Gazette of RS", No. 36/09). This Law is fully aligned with EU standards and, for the first time, it defines types of natural assets as: protected areas, protected species and moveable nature protected documents. According to the Law, there are seven types of protected areas in Serbia, three categories as well as three protection regimes that are defined by legal acts. Seven basic types of protected natural areas (PAs) are the following: strict nature reserve, special nature reserve, national park, monument of nature, protected habitat, landscape of extraordinary characteristics and nature parks. The Law on Nature Protection (LNP) introduces the concept of Protected Area „Manager“ instead of curator/guardian as stipulated by the former Law on Environmental Protection and Law on Nature Parks. Besides this, the Law also brings in National Nature Protection Symbol as well as basis for the numerous sub-laws that should regulate this area in more detail. Some of those have already been drafted, and are currently in the process of public discussion. Those are: The Regulation on criteria for selection of PA managers; The Decision on general taxes for usage of protected areas and Regulation on official ID card for guardians/rangers of protected areas.

Law on National Parks ("Official Gazette of RS", No. 39/93, 44/93, 53/93, 67/93, 48/94)

Law on Strategic Environmental Assessment (SEA) ("Official Gazette of RS", No. 135/04). According to this Law all national plans and programmes as well as municipal spatial and land use plans should undergo strategic environment assessment.

Law on Environmental Impact Assessment ("Official Gazette of RS", No. 135/04, 36/09). In the EIA procedure, there is the list of projects for which an impact assessment is mandatory and the list of projects for which an impact assessment may be required. Both lists are in accordance with Annex I of the EU Directive 97/11 amending EU Council Directive 337/85.

Other laws relevant to nature protection and biodiversity conservation include:

Law on forests ("Official Gazette of RS", No. 30/10), **Law on tourism** ("Official Gazette of RS", No. 36/09), **Law on wildlife and hunting** ("Official Gazette of RS", No. 18/10), **Law on fish management** ("Official Gazette of RS", No. 35/94, 38/94), **Law on water** ("Official Gazette of RS", No. 30/10), **Law on animal husbandry** ("Official Gazette of RS", No. 41/09).

Biosafety regulation is more severe than in EU regulations. All bio-material entering Serbia is checked by sanitary inspection for the presence of genetic modifications. Only accredited laboratories can perform this control and in cases where genetic modification is detected and GM is not in the GMO register, the material is either destroyed or sent back to expediter. The

existing **Law on GMO** ("Official Gazette of RS", No. 41/09) is in accordance with EU 90/220/EEC. This Law also defines the function of gene bank.

5.4 International Conventions and Agreements

Serbia is a party to a number of Multilateral Environmental Agreements and Conventions related to nature protection and biodiversity. Serbia ratified the **UN Convention on Biological Diversity** in 2002 ("Official Gazette of SRJ" 11/01) and acceded to its **Cartagena Protocol** in 2006. This not only underscores Serbia's commitment to the principle of biodiversity conservation, but it also provides legitimacy for incorporating biodiversity protection into the regulatory framework. Serbia is a party to the **UN Framework Convention on Climate Change – UNFCCC** (succeeded in 2001) and its **Kyoto Protocol** (ratified in 2007) as well as the **UN Convention to Combat Desertification – UNCCD** (ratified in 2008).

The Republic of Serbia also participates in the following agreements and conventions: the **Ramsar Convention of Wetlands of International Importance** (succeeded in 2001), the **Convention on the Protection of the World Cultural and Natural Heritage** (succeeded in 2001), the **Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)** (ratified in 2002), **International Convention for the Protection of Birds** (1973), **Convention on the Protection of the World Cultural and Natural Heritage** (succeeded in 2001), **Convention on the Conservation of Migratory Species of Wild Animals - Bonn Convention** (2007), Convention on the Conservation of European Wildlife and Natural Habitats - Bern Convention (2007), **Convention on the Protection and Sustainable Development of the Carpathians** (2007), **International Treaty on Plant Genetic Resources for Food and Agriculture** (2001), **Convention on Cooperation for Protection and Sustainable use of the Danube River** (2003).

A list of international conventions and agreements that Serbia is a part to is provided in Annex 9.

5.5 Research and Scientific Activities

Serbia has a strong scientific research tradition in the area of natural sciences. Scientific research is carried out by various universities, organizations and institutions. There are research programs in ecology, together with local applied research programs that are addressing various aspects of biodiversity and nature conservation. A primary drawback is that research and scientific activities are not coordinated or prioritized. Furthermore, there is no system for organizing and disseminating information. An analysis of the various research activities should be undertaken in order to develop a coherent, focused, and cost effective research program for biodiversity conservation.

Not always connected with university and research program there are a number of initiatives for ex-situ conservation in botanical gardens, parks, dendrological collections, flower collections, aquariums, terrariums, gene banks, and collections of micro-organisms that are of interest for agriculture, for food and other industrial sectors, and for a variety of other biotechnological applications that are now developing.

The most important scientific institutions (universities, institutes) include:

- Faculty of Biology, University of Belgrade (education/ research)
- Faculty of Agriculture, University of Belgrade (education/ research)
- Faculty of Forestry, University of Belgrade (education/ research)
- Faculty of Veterinary Medicine, University of Belgrade (education/ research)
- Faculty of Science, University of Novi Sad (education/ research)

Faculty of Science, University of Kragujevac (education/ research)
Faculty of Biology, University of Nis (education/ research)
Faculty of Agriculture, University of Novi Sad (education/ research)
Institute of Biological Research, Belgrade (research)
Institute for Nature Protection, Belgrade, Novi Sad, Nis (research/implementation)

5.6 The Role of NGOs

In addition to the state institutions in the field of environmental protection and nature conservation, numerous non-governmental organizations are active in this area. These organizations range from highly professionalized groups to local volunteer organizations acting both at national and international level. Some have undertaken a wide range of initiatives, including contributing pressure to achieve policy or management improvements and organizing various field activities (garbage clean-up, species protection, etc.). Together local, regional and international governments, agencies and institutions, have also often organized or participated effectively in cooperative projects in the area of biodiversity conservation. For example, the NGO “Fund for the protection of prey birds” is taking care on the Serbian population of rare European wide and endangered vulture *Gyps fulvus*.

Presently, Serbia has more than 200 registered NGOs dealing with environmental issues. They are part of a bigger community of more than 20,000 civic organizations and associations that operate in the country, out of which every fifth was established between 1990 and 2001. Environmental NGOs account for almost 12 percent of the total number of NGOs in Serbia, and are the third biggest group within all NGOs, followed by developmental and social service oriented NGOs.

5.7 Financing biodiversity conservation

Environmental financing sources in Serbia involve funds from the national budget which are allocated through ministries, institutions and funds, local self government budgets, and funds that come from many bilateral and multilateral treaties. The most significant international funds are the EU pre-accession funds.

Basic competences in this area are located within the Ministry of Environment and Spatial Planning. This institution, since its start in 1991, it has passed through many transformations (it was merged with other sectors, it was a directorate, etc.), very often marginalized and observed as a “cost” by higher levels decision makers and other economically stronger sectors. This also affected funding of this area. It was only when the Environmental Protection Fund was established that activities in this area started to be financed in an organized manner, in addition to regular budget allocations for the operation of competent institutions. In the majority of sectors, biodiversity is still seen only declaratively as an economic category, so substantial changes in strategic orientation are still missing. The Law on Environmental Protection Fund (2009) stipulates earmarked utilization of finances.

The Fund's means are used in compliance with the law, the statute, the Fund's working programme, and they are used, *inter alia*, for the following:

- 1) Protection, conservation and improvement of air quality, water, soil and forest quality, as well as for mitigation of climate change and protection of ozone layer;
- 2) Protection and conservation of biodiversity and geodiversity;
- 3) Encouraging of sustainable use of protected areas;
- 4) Encouraging of sustainable development of rural areas;
- 5) Incentives for education, research and development studies, programmes, projects and other activities, including demonstration activities;

6) Financing of programmes of eco education and public awareness raising related to environmental issues and sustainable development.

Out of the total Fund's budget in 2008, which amounted to 1.5 billion RSD, about 20 million RSD was allocated for protection and sustainable use of biodiversity, which is only 1.3% of total funds. In 2009, total budget of the Fund for all activities amounted to approximately 2 billion RSD.

Funding of protected areas is mostly provided from the budget, from utilization of natural resources, revenues gained from tourism, donations and other sources. Most of the budget funds which flow into the protected areas are spent for current costs of the institutional financing and for staff. The Ministry of Environment and Spatial Planning is responsible for protected areas at the national level, is financing activities in protected areas through various projects, which contributes to higher degree of utilization of funds intended for protection and development of biodiversity in natural areas. Activities which are financed through such projects include marking and maintenance of paths, rehabilitation of degraded areas, development of information systems, construction of visitors' centre, monitoring, reintroduction programmes and general status improvement in protected areas. In order to obtain funds for such activities, protected areas' managers submit their projects to the Ministry. The Ministry of Environment and Spatial Planning allocated about 2.5 million Euros for protected areas in 2007, about 1 million Euros in 2008, and a total of 1.3 million Euros was allocated in 2009.

Average amounts at the protected areas system level which are received from the Government through competent institutions ranges around 25%. In total, protected areas with currently available funds still miss about 50% to cover basic functioning costs, and about 75% for optimal functioning.

The Ministry of Environment and Spatial Planning also finance the development of applied projects in the area of biodiversity protection primarily within protected areas, as well as development of individual action plans for protection of endangered species, development of the Red Books and the Red Lists of endangered plant and animal species.

It is interesting to mention that although the country has significant external debt (in 2009 it was estimated at 22.2 billion Euros, while external debt of public sector amounts to 7.1 billion Euros), there were no attempts to introduce mechanism of debt conversion, or any bilateral negotiations about this mechanism.

Certain funds are allocated from the budget of the Government of AP Vojvodina to the Provincial Secretariat for Environmental Protection and Sustainable Development. The funds that were allocated in 2009 for biodiversity and protected areas development amounted to approximately 30 million RSD. Activities financed from the Provincial Secretariat include: sanation and revitalization of sensitive ecosystems (salty lands, steppe, old forests, wetlands, grasslands and shallow pools), monitoring of sensitive ecosystems of threatened species, biodiversity protection of particularly threatened communities, development of tourism infrastructure in PAs, capacity building of PAs managers and education of rangers.

The Ministry of Agriculture, Forestry and Water Management provides financial support to protected areas for certain activities. The Directorate for forests, a part of the Ministry, approves and finances projects related to afforestation, improvement of habitat conditions, production of seeds and seedlings, nurseries, construction of forest roads for afforestation and protection against fire, as well as for scientific projects. In 2009, the available budget for these activities was about 450 million RSD.

The Ministry of Agriculture, Forestry and Water Management also finances work of the Expert Council for Biosafety. This Ministry uses incentives to support conservation of

autochthonic species based on the principle of direct payment per domestic animal head, and until 2008 it had also encouraged the development of farms with autochthonic races, procurement of new breeding heads, keeping and maintenance of the national and reserve seed collections, maintenance of the national database for plant genetic resources, quality control and multiplication of samples in the national seed collection for the gene bank needs, maintenance and sustainable use of collection nurseries of fruit and vines, collections of crops, forage, industrial and medical crops, vegetables, as well as maintenance of autochthonic plant genetic resources in small husbandries. Also, the Ministry provides financial support to the organic production development through introduction of direct payment per head or per hectare.

Based on the competition procedure, the Ministry of Science finances development of basic, technological and innovative projects in various scientific areas, thus supporting research related to biodiversity protection and biosafety.

The European Commission introduced a unified financial instrument for pre-accession assistance – IPA for the budgeting period 2007-2013, which consolidated all the previous pre-accession funds. This unique instrument is intended to support the EU candidate countries, as well as potential candidate countries. Serbia, as a potential candidate for the EU membership, currently has access to first two IPA components: 1) support to transition process and development of institutions and 2) regional and transboundary cooperation. In 2009, Serbia will have access to 190 million Euros from IPA funds for development projects. The planned measures contained in the Rural Development Programme which refer to conservation of traditional races should be financed through IPARD funds starting from 2011, in the amount of 937,500 Euros annually (compared to 600,000 Euros in 2007). This would support 1,000 agricultural husbandries, i.e. between 4,000 and 10,000 animals of endangered autochthonic races.

In addition to the IPA funds, Serbia obtains certain funds for environmental projects from donations, loans, international assistance funds, the UN funds and international organizations instruments, programmes and funds, such as the Global Environmental Facility (GEF), the World Bank, the European Bank for Reconstruction and Development (EBRD), the United Nations Development Programme (UNDP), the United States Agency for International Development (USAID), the Swedish International Development and Cooperation Agency, the German Organization for Technical Cooperation (GTZ) and others. The Memorandum of Understanding, signed with the EU in June 2007, enabled Serbia a lawful participation in the 7th Framework Programme for Research and Technological Development (FP 7).

The current level of environmental investments in Serbia is low (between 2001 and 2005 it was about 0.3% of GDP, while estimations of the revised Memorandum on Budget and Economic and Fiscal Policy are 0.4% of GDP in 2008), and financing from the industry and private sector is insufficient. In their pre-accession period, new EU member states from Central Europe invested between 1.5% and 2.5% of GDP into the environment. Based on the Sustainable Development Strategy, it has been planned to achieve 1.5% of GDP of environmental investments in 2014, while achievement of target allocation for the environment of 2.5% of GDP is foreseen in 2017.

6 NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN – NBSAP

6.1 Current biodiversity conservation initiatives

Ministry of science and environment (2003-2005) financed and implemented the project "Harmonization of the national nomenclature in habitat classification with the international standards" with aim to make comparable habitat conservation the main unit for valid

biodiversity conservation with the international habitat classifications (e.g. EUNIS, Palearctis, CORINE, RAMSAR, IUCN, etc.)

This is important as an initial step in biodiversity monitoring and information system establishment.

Other relevant ongoing or finalizing projects funded and implemented by various development partners (IUCN, WWF, STAR, FAO, EUCARPIA, IPGRI, UNDP, UNEP, WB) include:

- EU funded Twining NATURA 2000 project on Strengthening Administrative Capacities for Protected Areas in Serbia (establishment of NATURA 2000)
- The Emerald network is an ecological network to conserve wild flora and fauna and their natural habitats of Europe, which was launched in 1998 by the Council of Europe as part of its work under the Convention on the Conservation of European Wildlife and Natural Habitats or Bern Convention that came into force on June 1, 1982. The Emerald Network is based on the same principles as Natura 2000, and represents its de facto extension to non-EU countries. Serbia is preparing over 60 sites for including in Emerald networks.
- The Regional Environmental Reconstruction Program (REReP) was the main environmental component of the former Stability Pact for SEE. REReP was initiated under the Stability Pact for South Eastern Europe and endorsed by ministries of SEE countries — including Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Former Yugoslav Republic of Macedonia, Montenegro, Romania, Serbia and Kosovo (under UNSCR 1244). The countries adopted the programme priorities and translated them into priority projects. Under the Stability pact a few projects were realized or are still under implementation: Belgrade Waste Water, City of Subotica Municipal Infrastructure Reconstruction Programme, Pancevo canal rehabilitation complementary project, Pilot River Basin Plan for Sava River, Danube Regional Investment Support Facility
- The European Green Belt initiative has the vision to create the backbone of an ecological network that runs from the Barents to the Black sea, spanning some of the most important habitats for biodiversity and almost all distinct biogeographical regions in Europe. A Green Belt network of protected areas will contribute to the conservation of biodiversity – first of all by harmonizing management methods on both sides of the border. The Green Belt connects National Parks, Nature Parks, Biosphere Reserves and transboundary protected areas as well as non-protected areas along or across borders and it supports regional development initiatives based on nature conservation. The Green Belt is an initiative that is tailored to fit the current political situation and the development taking place now, focussing on some of Europe's most impressive and fragile landscapes. The first site-based project coordinated by IUCN within this initiative focuses its activities on the Gornje Podunavlje Special Nature Reserve (SNR) in Serbia. Gornje Podunavlje, a large marshy complex bordering Hungary and Croatia, is one of the last remaining big floodplains in Europe. The other one is to raise awareness about Biodiversity and Sustainable Community Development in the Stara Planina Area. The aim of the project is to manage the conservation of biodiversity and sustainable development in the Stara Planina region (Serbia and Bulgaria) within the European Green Belt, as well as to enhance the economic growth for the surrounding villages and to support successful initiatives in this field.
- World Bank also supports many activities in Serbia. At present the project entitled Transitional Agriculture Reform concerning agro-environment is being implemented. This project is funded partially by the GEF.

- UNDP/GEF “National Biodiversity Strategy and Action Plan - NBSAP” Development of NBSAP, national reports and biodiversity CHM
- UNDP/GEF “Ensuring financial sustainability of the protected area system of Serbia “- the objective of the project is to improve the financial sustainability of Serbia’s protected area system and will be achieved through 1. Enabling legal and policy environment for improved PA financial sustainability; 2. Increasing revenue-streams for the PA system; and 3. Institutional and individual capacity of PA institutions to raise PA management cost-effectiveness.
- The WWF Danube-Carpathian Programme is implementing a program entitled 2010 Protected Areas Programme – The Carpathian Mountains Ecoregion – Phase 1. This program seeks to promote and support the implementation of the Convention of Biological Diversity Program of Work for Protected Areas. The overall goal for the project is to enable parties to the CBD from the ecoregion to achieve the 2012/2012 targets of the Program of Work on Protected Areas, in particular the establishment of a scientifically based and representative regional network of well-managed protected areas that are sustainably financed, ensure effective participation of local communities and provide social and economic benefits.
- WWF “Strengthening the capacity of governments and civil sector in Serbia and in Montenegro to adapt to EU nature protection aquis.” The goal of that project is to build up skills and competencies for government authorities and the civil sector in Serbia and Montenegro to successfully adapt to the EU’s legal biodiversity protection standards, as one important step in securing Euro-Atlantic integration.

6.2 NBSAP Priority areas and national goals

1. BIODIVERSITY CONSERVATION

1.1 Threatened Biological Diversity

Objective: *Enable Serbia’s species and ecological communities threatened with extinction to survive and thrive in their natural habitats and retain their genetic diversity and potential for evolutionary development. Restore biological diversity in degraded areas. Complement in-situ conservation measures by maintaining ex-situ facilities and conducting ex-situ conservation measures.*

1.1.1 Threatened species

1.1.2 Threatened ecological communities

1.1.3 Ecological Restoration

1.1.4 Ex-situ conservation

1.2 Managing Threatening Processes

Objective: *Monitor, regulate, and minimize processes and activities that have or are likely to have significant adverse impacts on biological diversity.*

1.2.1 Non-native species and genetically modified organisms

1.2.2 Pollution/Contamination

1.2.3 Fire

2. PROTECTED AREA SYSTEM

2.1 Protected Area System Effectiveness

Objective 1.1: *Establish and manage a comprehensive, adequate, and representative system of protected areas covering Serbia’s biological diversity.*

Objective 1.2: *Ensure the availability of sufficient financial resources for maintenance and expansion of the protected area system of Serbia while enhancing the long-term financial sustainability of the system.*

3. SUSTAINABLE USE OF BIODIVERSITY, ACCESS AND BENEFIT SHARING, AND ECONOMIC VALUATION

3.1 Sustainable use of biological diversity

Objective 3.1: Develop new and strengthen existing mechanisms to ensure the sustainable use of Serbia's biological diversity. Promote these mechanisms widely within public and private sectors.

3.2 Access and benefit sharing

Objective 3.2: Ensure that social and economic benefits of the use of genetic material and other products and services derived from Serbia's biological diversity accrue to Serbia.

3.3 Economic valuation of biodiversity

Objective 3.3: Increase national awareness and use of economic valuation of biodiversity techniques as a mechanism for more accurately assessing and accounting for the economic trade-offs between biodiversity protection and human activities that may result in biodiversity loss.

4. POLICY, LEGAL, INSTITUTIONAL, AND FINANCIAL FRAMEWORKS FOR BIODIVERSITY CONSERVATION

4.1 Policy Framework

Objective 4.3: Strengthen and expand the policy framework for biodiversity conservation.

4.2 Legal Framework

Objective 4.2: Strengthen the legal framework for biodiversity conservation and ensure enforcement and compliance of biodiversity related legislation.

4.3 Institutional Framework

Objective 4.3: Strengthen the institutional framework for biodiversity conservation.

4.4 Financial Framework

Objective 4.4: Strengthen and expand financing for biodiversity conservation and provide incentives for biodiversity conservation within all sectors.

5. INTEGRATION OF BIOLOGICAL DIVERSITY CONSERVATION INTO OTHER SECTORS

5.1 National integrated policies and guidelines

Objective 5.1: Develop and implement national integrated policies for the conservation and sustainable use of biological diversity.

5.2 Integration of biodiversity into other sectors

Objective 5.2: Improve the integration of biodiversity concerns into all relevant sectors.

5.2.1 Agriculture and livestock

5.2.2 Forestry

5.2.3 Wildlife Resources

5.2.4 Mining

5.2.5 Water Resources

5.2.6 Tourism and outdoor recreation

6. KNOWLEDGE BASE

6.1 National Biodiversity Information System

Objective 6.1: Collect, review, and synthesize available data and information on biological

diversity to provide a basis for assessing the status of, monitoring, conservation, and sustainable use of biological diversity.

6.2 Biodiversity Monitoring

Objective 6.2: Establish a national program to identify and monitor priority species, habitats, and genetic components of biodiversity as well as the effects of activities and processes that threaten components of biodiversity and their causes.

6.3 Biodiversity Research

Objective 6.3: Support aimed at understanding and maintaining biological diversity in Serbia.

7. CAPACITY BUILDING

7.1 Technical capacity building

Objective 7.1: Build and strengthen capacities within all relevant public and private institutions for biodiversity conservation and sustainable use.

7.2 Infrastructure and Equipment

Objective 7.3: Develop necessary infrastructure and provide essential equipment for biodiversity monitoring, conservation, and sustainable use within relevant institutions.

8. EDUCATION, PUBLIC AWARENESS, AND PARTICIPATION

8.1 Formal Education

Objective 8.1: Generate a greater understanding of the importance of biodiversity and develop skills for studying and protecting biodiversity through integration of information about biodiversity in formal educational curricula.

8.2 Public Awareness

Objective 8.2: Foster public understanding, support, and action for biodiversity conservation through the integration of biodiversity information in formal educational curricula.

8.3 Participation

Objective 8.3: Involve local residents and communities in planning, decision-making, and implementation for biodiversity conservation.

9. INTERNATIONAL COOPERATION

9.1 Coordination with other international instruments for biodiversity conservation

Objective 9.1: Ensure coherency of and coordination between this strategy and other international biodiversity-related commitments and agreements.

9.2 Regional and international collaboration

Objective 9.2: Ensure continued and effective international cooperation for the protection of biodiversity.

10. CLIMATE CHANGE

10.1 National action on climate change

Objective 10.1: Develop national strategies and mechanisms to understand, plan for, and minimize potential impacts of climate change on biological diversity.

10.2 Climate change research, monitoring, and evaluation.

Objective 10.2: Increase capacity among relevant institutions to monitor and predict impacts of climate change on biodiversity and evaluate the effectiveness of adaptation strategies and actions.

10.3 Climate change awareness

Objective 10.3: *Increase awareness among all sectors and the general public of climate change impacts and adaptation strategies.*

11. IMPLEMENTATION OF THE STRATEGY

11.1 Financing of the strategy

Objective 11.1: *Ensure a diverse portfolio of sources and strategies for long-term funding of the strategy. Ensure that the costs of biological diversity conservation are equitably shared among institutions and stakeholders such that they reflect contributions to degradation and benefits from protection or use.*

11.2 Coordination, review, and updating of the strategy

Objective 11.2: *Establish appropriate mechanisms and develop necessary capacities to implement, monitor, and refine the strategy.*

ANNEXES

1. List of habitats of Serbia

Vegetation Class	Species No.	% Species
<i>Querco-Fagetea</i> Br.-Bl. et Vileger 1937 (forests of oak and beech)	1498	52.49
<i>Festuco-Brometea</i> Br.-Bl. et R. Tx. 1943 (grasslands with fescue and brome)	1194	41.84
<i>Molinio-Arrhenatheretea</i> R. Tx. 1937 (Molinia meadows)	895	31.36
<i>Vaccinio-Piceetea</i> Br.-Bl. 1939 emend. Zupančić 1976 (forests with spruce and bilberry)	703	24.63
<i>Erico-Pinetea</i> Ht. 1959 (forests with pines and heath)	683	23.93
<i>Festucetea vaginatae</i> Soó 1968 emend. Vicherek 1972* (grasslands with vaginate fescue)	681	23.86
<i>Festuco-Seslerietea</i> Barbero et Bonim 1969 (grasslands with fescue and Sesleria)	673	23.58
<i>Asplenietea trichomanis</i> Br.-Bl. 1934 corr. Oberd. 1977 (rock vegetation with maiden hair dwarf spleenwort)	568	19.90
<i>Artemisietae vulgaris</i> Lohm., Prsg. et R. Tx. 1950 (vegetation with mugwort)	524	18.36
<i>Juncetea trifidi</i> Hadač 1944 (grasslands with three leaved rush)	441	15.45
<i>Betulo-Adenostyletea</i> Br.-Bl. et R. Tx. 1943 (birch forests)	357	12.51
<i>Nardo-Callunetea</i> Preising 1949 (heatlands with Nardus and Calluna)	333	11.67
<i>Bidentetea tripartitii</i> Tx., Lohm. et Prsg. 1950 (wetlands with burr marigold)	327	11.46
<i>Chenopodietea</i> Br.- Bl.1951 em. Lohm. J. et R. Tx.1961 (vegetation with goose-foot)	301	10.55
<i>Stellarietea mediae</i> Tx., Lohm. et Prsg. 1950 (vegetation with starworts)	292	10.23
<i>Epilobietea angustifolii</i> R. Tx. Et Preising 1950 (vegetation with willow herb)	291	10.20
<i>Phragmitetea communis</i> R. Tx. et Preising 1942 (vegetation with common reed)	290	10.16
<i>Festuco-Puccinellietea</i> Soó 1968 (grasslands with fescue and punch)	246	8.62
<i>Plantaginetea majoris</i> Tx. et Prsg. 1950 (vegetation with greater plantain)	242	8.48
<i>Scheuchzerio-Caricetea fuscae</i> (Nordhagen 1936) R. Tx. 1937 (wetlands with sedges)	238	8.34
<i>Alnetea glutinosae</i> Br.-Bl. et R. Tx. 1943 (forests with alder)	220	7.71
<i>Drypetea spinosae</i> Quezel 1967 (vegetation with commune dripide)	211	7.39
<i>Isoeto-Nanojuncetea</i> Br.-Bl. Et Tx. 1943 (wetlands with quillwort and small rushes)	148	5.19
<i>Agropyretea repantis</i> Oberd., Th. Muller et Gors 1967 (grasslands with chiendent)	148	5.19
<i>Thero-Brachypodietea</i> Br.-Bl. 1947 (grassland with chiendent)	112	3.92
<i>Paliuretea Trinajstići</i> 1978 (vegetation with Christ's thorn)	85	2.98
<i>Thero-Salicornietea</i> Pignatti 1953 emend. R. Tx. 1955 (vegetation with glasscorns)	77	2.70
<i>Thlaspietea rotundifolii</i> Br.-Bl. et al. 1947(vegetation with penny-cress)	72	2.52
<i>Potametea</i> R. Tx. et Preising 1942 (water vegetation with pondweeds)	66	2.31
<i>Salicetea purpureae</i> Moor 1958 (vegetation with purple osier)	52	1.82
<i>Salicetea herbaceae</i> Br.-Bl. et al .1947 (vegetation with drarf willow)	46	1.61
<i>Montio-Cardaminetea</i> Br.-Bl. Et Tx. 1943 (vegetation with cardamom)	40	1.40
<i>Charetea Fukarek</i> 1961 ex Krauch 1964 (water vegetation with stoneworts)	37	1.30
<i>Lemnetea</i> W. Koch et R. Tx. 1954 (floatant water vegetation with duckweeds)	36	1.26
<i>Ruppieteа maritimae</i> J. Tüxen 1960 (water vegetation typed with widgeongrass)	19	0.67

Vegetation Class	Species No.	% Species
Total	2854	100.00

Source: Lakusic (2005)

2. Estimated number of habitat types in Serbia as estimated by vegetation communities

	Vegetation where vascular plants are predominated	Vegetation where lichens are predominated	Vegetation where bryophytes are predominated	Total
Class	41	7	11	59
Ordo	81	11	22	114
Alliance	177	19	46	242
Suballiance	26	0	0	26
Number of associations	1198	52	149	1399
Number of infra-association level	971	0	0	971
Estimated number of valid coenoses	700-800	50	150	≈ 1000
Estimated number of valid coenoses at infra-association level	400-500			≈ 500

Source: Lakusic (2005)

3. Habitat types of Serbia

1. TERRESTRIAL SURFACE WATER HABITATS

A. Terrestrial stagnant freshwater habitats

- permanent oligotrophic lakes, bogs and ponds
- permanent mesotrophic lakes, bogs and ponds
- permanent eutrophic lakes, bogs and ponds
- permanent dystrophic lakes, bogs and ponds
- permanent terrestrial salt and brackish lakes, bogs and ponds
- temporary lakes, bogs and ponds (wet phases)

B. Terrestrial running freshwater habitats

- sources, fountains and geysirs
- permanent, fast and turbulent water runnings with no level fluctuations
- permanent, slow, calm water runnings with no level fluctuations
- river runnings with level fluctuations, upstream of estuary
- temporary running waters (wet phase)
- water film running over rocks laterally of main stream

C. Litoral zone of terrestrial surface water

- species rich helophyte groupation
- high helophyte groupation at the water basin edges
- water shrub groupation at the water basin edges
- species poor groupation or amphibian vegetation
- pioneering and ephemeral vegetation at the periodically inundated water sides
- water sides of soft and unstable sediments with or without sparse vegetation
- water sides with stable substrates with or without sparse vegetation
- terrestrial habitats depending on water spray or water flow

2. SWAMP, MIRE, BOGS AND FENS

- high or low swamps
- valley, poor and transitional swamps
- mires rich in bases
- bosque and reed, usually without free standing water surface
- terrestrial salty and brackish fens and reeds

3. GRASSLANDS AND HIGH HERBACEOUS HABITATS

- dry grasslands
- moderately wet grasslands
- seasonally wet and wet grasslands
- alpine and subalpine grasslands
- woodland aperture and clearings and high herbaceous habitats
- innerland salty habitats with domination of grasses and herbaceous

4. HEATLANDS, BUSHES AND TUNDRA

- arctic, alpine and subalpine bushy habitats
- moderate and mediterranean-montane bushy habitats
- moderate bushy heatlands
- macchia, matorral and thermo-mediterranean bushy habitats
- spinous mediterranean heatlands (phrygana, small bushes and related vegetation on cliff sides)
- river and fen bushy vegetation
- hedgerow
- bush plantations

5. FORESTS AND WOODED HABITATS AND OTHER WOODED SURFACES

- broadleaf deciduous forests
- coniferous forests
- mixed deciduous and coniferous forests

- alleys, small anthropogenic woodlands, recently cut, young forest and wood derived from cuttings

6. INNERCONTINENTAL HABITATS WITH FAINTLY DEVELOPED VEGETATION

- terrestrial underground caves, cave systems, corridors and waters
- rock crevices
- innercontinental cliffs, rocky plateaux and flat surfaces and huge boulders
- various innercontinental habitats with or without scattered vegetation

7. REGULARLY OR RECENTLY CULTIVATED AGRICULTURE, HORTICULTURE OR DOMESTIC HABITATS

- arable lands and gardens of crops
- cultural surfaces of gardens and parks

8. CONSTRUCTION, INDUSTRIAL AND OTHER ARTIFICIAL HABITATS

- urban, suburban and rural construction
- sparse tenements
- industrial zones out of which the extraction process is performed
- transport networks and other areas of surface construction
- waters originated from humans and related structures
- waste deposition sites

4. Species under strict control of use and trade in Serbia (beside CITES species)

Plants (Planta)
Fam. Alliaceae
1. <i>Allium ursinum</i> L.
Fam. Araliaceae
2. <i>Hedera helix</i> L.
Fam. Aristolochiaceae
3. <i>Asarum europaeum</i> L.
Fam. Asteraceae
4. <i>Achillea clypeolata</i> Sibth. & Sm.
5. <i>Achillea millefolium</i> L.
6. <i>Arctium lappa</i> L.
7. <i>Carlina acaulis</i> L.
8. <i>Inula helenium</i> L.
9. <i>Petasites hybridus</i> (L.) P. Gaertner, B. Meyer & Scherb.
10. <i>Solidago virgaurea</i> L.
11. <i>Tussilago farfara</i> L.
Fam. Betulaceae
12. <i>Betula pendula</i> Roth
Fam. Boraginaceae
13. <i>Pulmonaria officinalis</i> L.
14. <i>Sympytum officinale</i> L.
Fam. Caryophyllaceae
15. <i>Gypsophila paniculata</i> L.
16. <i>Herniaria glabra</i> L.
17. <i>Herniaria hirsuta</i> L.
18. <i>Herniaria incana</i> Lam.
Fam. Cornaceae

19. <i>Cornus mas</i> L.
Fam. Corylaceae
20. <i>Corylus avellana</i> L.
Fam. Cupressaceae
21. <i>Juniperus communis</i> L.
22. <i>Juniperus communis</i> L. ssp. <i>nana</i> Syme
Fam. Equisetaceae
23. <i>Equisetum arvense</i> L.
Fam. Ericaceae
24. <i>Arctostaphylos uva- ursi</i> (L.) Sprengel
Fam. Fabaceae
25. <i>Anthyllis vulneraria</i> L.
26. <i>Genista tinctoria</i> L.
27. <i>Glycirrhiza glabra</i> L.
28. <i>Melilotus officinalis</i> (L.) Pallas
29. <i>Ononis spinosa</i> L.
Fam. Fumariaceae
30. <i>Fumaria officinalis</i> L.
Fam. Gentianaceae
31. <i>Centaурium umbelatum</i> Gilib
32. <i>Gentiana asclepiadea</i> L.
33. <i>Gentiana cruciata</i> L.
Fam. Geraniaceae
34. <i>Geranium robertianum</i> L.
Fam. Hypericaceae
35. <i>Hypericum barbatum</i> Jacq.
36. <i>Hypericum maculatum</i> Crantz
37. <i>Hypericum perforatum</i> L.
38. <i>Hypericum rumelicum</i> Boiss.
Fam. Iridaceae
39. <i>Iris germanica</i> L.
40. <i>Iris pseudoacorus</i> L.
Fam. Lamiaceae

41. <i>Glechoma hederacea</i> L.
42. <i>Glechoma hirsuta</i> Waldst. & Kit.
43. <i>Lamium album</i> L.
44. <i>Leonurus cardiaca</i> L.
45. <i>Marrubium vulgare</i> L.
46. <i>Melissa officinalis</i> L.
47. <i>Origanum vulgare</i> L.
48. <i>Satureja kitaibelii</i> Wierzb.
49. <i>Satureja montana</i> L.
50. <i>Teucrium chamaedrys</i> L.
51. <i>Teucrium montanum</i> L.
52. <i>Thymus</i> sp.
Fam. Liliaceae
53. <i>Colchicum autumnale</i> L.
54. <i>Convallaria majalis</i> L.
55. <i>Ruscus aculeatus</i> L.
56. <i>Ruscus hypoglossum</i> L.
57. <i>Veratrum nigrum</i> L.
Fam. Malvaceae
58. <i>Althaea officinalis</i> L.
59. <i>Malva sylvestris</i> L.
Fam. Oenotheraceae
60. <i>Epilobium hirsutum</i> L.
61. <i>Epilobium montanum</i> L.
62. <i>Epilobium parviflorum</i> Schreber
Fam. Polygonaceae
63. <i>Polygonum bistorta</i> L.
Fam. Polypodiaceae
64. <i>Athyrium filix-femina</i> (L.) Roth
65. <i>Dryopteris filix-mas</i> (L.) Schott
Fam. Primulaceae
66. <i>Primula elatior</i> (L.) Hill
67. <i>Primula veris</i> L.

68. <i>Primula vulgaris</i> Hudson
Fam. Ranunculaceae
69. <i>Aconitum vulparia</i> Reichenb.
70. <i>Helleborus odorus</i> Waldst. & Kit.
71. <i>Hepatica nobilis</i> Schreber
Fam. Rhamnaceae
72. <i>Frangula alnus</i> Miller
Fam. Rosaceae
73. <i>Alchemilla</i> sp.
74. <i>Crataegus monogyna</i> Jacq.
75. <i>Crataegus oxyacantha</i> L.
76. <i>Crataegus pentagyna</i> Waldst. & Kit. ex Willd.
77. <i>Fragaria vesca</i> L.
78. <i>Geum urbanum</i> L.
79. <i>Potentilla erecta</i> (L.) Rochel
80. <i>Prunus spinosa</i> L.
81. <i>Rosa canina</i> L.
82. <i>Rubus fruticosus</i> L.
83. <i>Rubus idaeus</i> L.
Fam. Rubiaceae
84. <i>Galium odoratum</i> (L.) Scop.
Fam. Rubiaceae
85. <i>Galium verum</i> L.
86. <i>Rubia tinctorum</i> L.
Fam. Sambucaceae
87. <i>Sambucus nigra</i> L.
Fam. Scrophulariaceae
88. <i>Euphrasia</i> sp.
89. <i>Veronica officinalis</i> L.
Fam. Tiliaceae
90. <i>Tilia cordata</i> Miller
91. <i>Tilia tomentosa</i> Moench

Fam. Vacciniaceae
92. <i>Vaccinium myrtillus</i> L.
Fam. Violaceae
93. <i>Viola odorata</i> L.
94. <i>Viola tricolor</i> L.
Lichens (Lihenes)
Fam. Usneaceae
1. <i>Usnea barbata</i> (L.) Web. In Wigg
Fam. Parmeliaceae
2. <i>Evernia prunastri</i> (L.) Ach
3. <i>Cetraria islandica</i> (L.) Ach
Fungi (Fungi)
Fam. Boletaceae
1. <i>Boletus aereus</i> Bull. Fr.
2. <i>Boletus aestivalis</i> (Paulet) Fr.
3. <i>Boletus edulis</i> Bull. Fr.
4. <i>Boletus pinophilus</i> Pilat & Dermerk

Fam. Cantharellaceae
5. <i>Cantharellus cibarius</i> L. Fr.
6. <i>Craterellus cornucopioides</i> Pers.
Fam. Russulaceae
7. <i>Lactarius deliciosus</i> (L.) S.F.Gray.
8. <i>Lactarius deterrimus</i> Groger
9. <i>Lactarius salmonicolor</i> Heim & Lecl.
10. <i>Lactarius sanguifluus</i> (Paul.) Fr.
11. <i>Lactarius semisanguifluus</i> Heim & Lecl.
Fam. Marasmiaceae
12. <i>Marasmius oreades</i> (Bolt. Fr.) Fr.
Fam. Tuberaceae
13. <i>Tuber magnatum</i>
14. <i>Tuber aestivum</i>
15. <i>Tuber brumale</i>

Animals
Fam. Acipenseridae
1. <i>Huso huso</i>
Fam. Testudinidae
2. <i>Testudo hermanni</i>
Fam. Viperidae
3. <i>Vipera ammodytes</i>
Fam. Ranidae
4. <i>Rana kl. Esculenta</i>
5. <i>Rana lessonae</i>
6. <i>Rana ridibunda</i>
Fam. Helicidae
7. <i>Helix aspersa</i>
8. <i>Helix leucorum</i>

9. *Helix pomatia*

Fam. Hirudinidae

10. *Hirudo medicinalis*

5. Strictly protected species in Serbia

Mammals

1. *Barbastella barbastellus*
2. *Canis lupus*
3. *Castor fiber*
4. *Chionomys nivalis*
5. *Cricetus cricetus*
6. *Dinaromys bogdanovi*
7. *Dryomys nitedula*
8. *Eptesicus serotinus*
9. *Felis silvestris*
10. *Hypsugo savii*
11. *Lutra lutra*
12. *Lynx lynx*
13. *Micromys minutus*
14. *Microtus liechtensteini*
15. *Miniopterus schreibersii*
16. *Muscardinus avellanarius*
17. *Mustela erminea*
18. *Mustela eversmanni*
19. *Mustela nivalis*
20. *Myotis bechsteinii*
21. *Myotis blythii*
22. *Myotis brandtii*
23. *Myotis capaccinii*
24. *Myotis dasycneme*
25. *Myotis daubentonii*
26. *Myotis emarginatus*
27. *Myotis myotis*
28. *Myotis mystacinus*
29. *Myotis nattereri*
30. *Neomys fodiens*
31. *Nyctalus leisleri*
32. *Nyctalus noctula*
33. *Pipistrellus kuhlii*
34. *Pipistrellus nathusii*
35. *Pipistrellus pipistrellus*
36. *Pipistrellus pygmaeus*
37. *Plecotus auritus*
38. *Plecotus austriacus*
39. *Rhinolophus blasii*
40. *Rhinolophus euryale*
41. *Rhinolophus ferrumequinum*
42. *Rhinolophus hipposideros*
43. *Rhinolophus mehelyi*
44. *Sicista subtilis*
45. *Sorex alpinus*
46. *Spalax leucodon*
47. *Spermophilus citellus*
48. *Talpa caeca*
49. *Ursus arctos*
50. *Vespertilio murinus*
51. *Vormela peregusna*

Birds

1. *Accipiter brevipes*
2. *Accipiter nisus*
3. *Acrocephalus arundinaceus*
4. *Acrocephalus palustris*

5. *Acrocephalus schoenobaenus*
6. *Actitis hypoleucos*
7. *Aegithalos caudatus*
8. *Aegolius funereus*
9. *Aegypius monachus*
10. *Aerocephalus melanopogon*
11. *Aerocephalus paludicola*
12. *Aerocephalus scirpaceus*
13. *Alauda arvensis*
14. *Alcedo atthis*
15. *Alectoris graeca*
16. *Anas acuta*
17. *Anas clypeata*
18. *Anas penelope*
19. *Anas querquedula*
20. *Anas strepera*
21. *Anser anser*
22. *Anser brachyrhynchus*
23. *Anser erythropodus*
24. *Anthus campestris*
25. *Anthus cervinus*
26. *Anthus pratensis*
27. *Anthus spinoletta*
28. *Anthus trivialis*
29. *Apus apus*
30. *Apus pallidus*
31. *Aquila chrysaetos*
32. *Aquila clanga*
33. *Aquila heliaca*
34. *Aquila pomarina*
35. *Ardea purpurea*
36. *Ardeola ralloides*
37. *Arenaria interpres*
38. *Asio flameus*
39. *Asio otus*
40. *Athene noctua*
41. *Aythya fuligula*
42. *Aythya marila*
43. *Aythya nyroca*
44. *Bombycilla garrulus*
45. *Bonasa bonasia*
46. *Botaurus stellaris*
47. *Branta bernicla*
48. *Branta leucopsis*
49. *Branta ruficollis*
50. *Bubo bubo*
51. *Bubulcus ibis*
52. *Bucephala clangula*
53. *Burchinus oedicnemus*
54. *Buteo buteo*
55. *Buteo lagopus*
56. *Buteo rufinus*
57. *Calandrella brachydactyla*
58. *Calandrella rufescens*
59. *Calcarius lapponicus*
60. *Calidris alba*
61. *Calidris alpina*
62. *Calidris ferruginea*
63. *Calidris minuta*
64. *Calidris temminckii*
65. *Caprimulgus europeus*
66. *Carduelis cannabina*
67. *Carduelis carduelis*
68. *Carduelis chloris*
69. *Carduelis flammea*
70. *Carduelis flavirostris*
71. *Carduelis hornemannii*
72. *Carduelis spinus*
73. *Carpodacus erythrinus*
74. *Casmerodium albus*
75. *Cathartacta skua*
76. *Certhia brachydactyla*
77. *Certhia familiaris*
78. *Cettia cetti*
79. *Charadrius alexandrinus*
80. *Charadrius dubius*
81. *Charadrius hiaticula*
82. *Chlidonias hybrida*
83. *Chlidonias leucopterus*
84. *Chlidonias niger*
85. *Ciconia ciconia*
86. *Ciconia nigra*
87. *Cinclus cinclus*
88. *Circaetus gallicus*
89. *Circus aeruginosus*
90. *Circus cyaneus*
91. *Circus macrourus*
92. *Circus pygargus*
93. *Cisticola*
94. *Clamator glandarius*
95. *Clangula hyemalis*
96. *Columba livia*
97. *Columba oenas*
98. *Coracias garrulus*
99. *Crex crex*
100. *Cuculus canorus*
101. *Cygnus columbianus*
102. *Cygnus cygnus*
103. *Delichon urbica*
104. *Dendrocopos leucotos*
105. *Dendrocopos major*
106. *Dendrocopos medius*
107. *Dendrocopos minor*
108. *Dendrocopos syriacus*
109. *Dryocopus martius*
110. *Egretta garzetta*
111. *Emberiza calandra*
112. *Emberiza cia*
113. *Emberiza cirlus*
114. *Emberiza citrinella*
115. *Emberiza hortulana*
116. *Emberiza melanocephala*
117. *Emberiza schoeniclus*
118. *Eremophila alpestris*
119. *Erithacus rubecula*
120. *Eudromias morinellus*
121. *Falco biarmicus*
122. *Falco cherrug*
123. *Falco columbarius*
124. *Falco naumannii*
125. *Falco peregrinus*
126. *Falco subbuteo*
127. *Falco tinnunculus*

128. *Falco vespertinus*
 129. *Ficedula albicollis*
 130. *Ficedula hypoleuca*
 131. *Ficedula parva*
 132. *Ficedula semitorquata*
 133. *Galerida cristata*
 134. *Gallinago gallinago*
 135. *Gallinago media*
 136. *Gavia arctica*
 137. *Gavia immer*
 138. *Gavia stellata*
 139. *Glareola pratincola*
 140. *Glaucidium passerinum*
 141. *Grus grus*
 142. *Gypaetus barbatus*
 143. *Gyps fulvus*
 144. *Haematopus ostralegus*
 145. *Haliaeetus albicilla*
 146. *Hieraetus fasciatus*
 147. *Hieraetus pennatus*
 148. *Himantopus himantopus*
 149. *Hippolais icterina*
 150. *Hippolais olivetorum*
 151. *Hippolais pallida*
 152. *Hirundo daurica*
 153. *Hirundo rustica*
 154. *Ixobrychus minutus*
 155. *Jynx torquilla*
 156. *Lanius collurio*
 157. *Lanius excubitor*
 158. *Lanius minor*
 159. *Lanius nubicus*
 160. *Lanius senator*
 161. *Larus fuscus*
 162. *Larus marinus*
 163. *Larus melanocephalus*
 164. *Larus minutus*
 165. *Limicola falcinellus*
 166. *Limosa limosa*
 167. *Locustella fluviatilis*
 168. *Locustella lusciniooides*
 169. *Locustella naevia*
 170. *Loxia curvirostra*
 171. *Lullula arborea*
 172. *Luscinia luscinia*
 173. *Luscinia megarhynchos*
 174. *Luscinia svecica*
 175. *Lymnocryptes minimus*
 176. *Melanitta fusca*
 177. *Melanitta nigra*
 178. *Melanocorypha calandra*
 179. *Mergus albellus*
 180. *Mergus merganser*
 181. *Mergus serrator*
 182. *Merops apiaster*
 183. *Milvus migrans*
 184. *Milvus milvus*
 185. *Monticola saxatilis*
 186. *Monticola solitarius*
 187. *Montifringilla nivalis*
 188. *Motacilla alba*
 189. *Motacilla cinerea*
 190. *Motacilla flava*
 191. *Muscicapa striata*
 192. *Neophron percnopterus*
 193. *Netta rufina*
 194. *Nucifraga caryocatactes*
 195. *Numenius arquata*
 196. *Numenius phaeopus*
 197. *Numenius tenuirostris*
 198. *Nycticorax nycticorax*
 199. *Oenanthe hispanica*
 200. *Oenanthe oenanthe*
 201. *Oriolus oriolus*
 202. *Otis tarda*
 203. *Otus scops*
 204. *Oxyura leucocephala*
 205. *Pandion haliaetus*
 206. *Panurus biarmicus*
 207. *Parus ater*
 208. *Parus caeruleus*
 209. *Parus cristatus*
 210. *Parus lugubris*
 211. *Parus major*
 212. *Parus montanus*
 213. *Parus palustris*
 214. *Passer hispaniolensis*
 215. *Pelecanus crispus*
 216. *Pelecanus onocrotalus*
 217. *Pernis apivorus*
 218. *Petronia petronia*
 219. *Phalacrocorax pygmaeus*
 220. *Phalaropus fulicarius*
 221. *Phalaropus lobatus*
 222. *Philomachus pugnax*
 223. *Phoenicopterus roseus*
 224. *Phoenicurus ochruros*
 225. *Phoenicurus phoenicurus*
 226. *Phylloscopus collybita*
 227. *Phylloscopus sibilatrix*
 228. *Phylloscopus trochilus*
 229. *Phylloscopus bonelli*
 230. *Picoides tridactylus*
 231. *Picus canus*
 232. *Picus viridis*
 233. *Platelea leucorodia*
 234. *Plectrophenax nivalis*
 235. *Plegadis falcinellus*
 236. *Pluvialis apricaria*
 237. *Pluvialis squatarola*
 238. *Podiceps auritus*
 239. *Podiceps cristatus*
 240. *Podiceps griseigena*
 241. *Podiceps nigricollis*
 242. *Porzana parva*
 243. *Porzana porzana*
 244. *Porzana pusilla*
 245. *Prunella collaris*
 246. *Prunella modularis*
 247. *Ptyonoprogne rupestris*
 248. *Pyrhocorax graculus*
 249. *Pyrhocorax pyrhocorax*
 250. *Rallus aquaticus*
 251. *Recurvirostra avosetta*
 252. *Regulus ignicapillus*
 253. *Regulus regulus*
 254. *Remiz pendulinus*
 255. *Riparia riparia*
 256. *Rissa tridactyla*
 257. *Saxicola rubetra*
 258. *Saxicola torquatus*
 259. *Scolopax rusticola*
 260. *Serinus serinus*
 261. *Sitta europaea*
 262. *Sitta neumayer*
 263. *Somateria mollissima*
 264. *Stercorarius longicaudus*
 265. *Stercorarius parasiticus*
 266. *Stercorarius pomarinus*
 267. *Sterna albifrons*
 268. *Sterna caspia*
 269. *Sterna hirundo*
 270. *Sterna nilotica*
 271. *Strix aluco*
 272. *Strix uralensis*
 273. *Sturnus roseus*
 274. *Sylvia atricapilla*
 275. *Sylvia borin*
 276. *Sylvia cantillans*
 277. *Sylvia communis*
 278. *Sylvia curruca*
 279. *Sylvia hortensis*
 280. *Sylvia melanocephala*
 281. *Sylvia nisoria*
 282. *Tachybaptus ruficollis*
 283. *Tachymarptis melba*
 284. *Tadorna ferruginea*
 285. *Tadorna tadorna*
 286. *Tetrao urogallus*
 287. *Tetrao tetrix*
 288. *Tichodroma muraria*
 289. *Tringa erythropus*
 290. *Tringa glareola*
 291. *Tringa nebularia*
 292. *Tringa ochropus*
 293. *Tringa stagnatilis*
 294. *Tringa totanus*
 295. *Troglodytes troglodytes*
 296. *Turdus iliacus*
 297. *Turdus merula*
 298. *Turdus philomelos*
 299. *Turdus pilaris*
 300. *Turdus torquatus*
 301. *Turdus viscivorus*
 302. *Tyto alba*
 303. *Upupa epops*
 304. *Vanellus vanellus*

Reptiles

1. *Ablepharus kitaibelii*
2. *Algyroides nigropunctatus*
3. *Coronella austriaca*
4. *Cyrtopodion kotschy*
5. *Darevskia praticola*
6. *Dolichophis caspius*
7. *Elaphe quatuorlineata*

8. *Emys orbicularis*
9. *Natrix natrix*
10. *Natrix tessellata*
11. *Platyceps najadum*
12. *Podarcis erhardii*
13. *Podarcis tauricus*
14. *Testudo graeca*
15. *Vipera berus*
16. *Vipera ursinii*
17. *Zamenis longissimus*
18. *Zootoca vivipara*

Amphibians

1. *Bombina bombina*
2. *Bombina variegata*
3. *Bufo bufo*
4. *Hyla arborea*
5. *Lissotriton vulgaris*
6. *Mesotriton alpestris*
7. *Pelobates fuscus*
8. *Pelobates syriacus*
9. *Pseudoepeipalea viridis*
10. *Rana dalmatina*
11. *Rana graeca*
12. *Rana temporaria*
13. *Salamandra atra*
14. *Salamandra salamandra*
15. *Triturus carnifex*
16. *Triturus cristatus*
17. *Triturus dobrogicus*
18. *Triturus karelinii*

Fishes

1. *Acipenser gueldenstaedtii*
2. *Acipenser nudiventris*
3. *Acipenser stellatus*
4. *Acipenser sturio*
5. *Alburnus chalcooides*
6. *Alosa immaculata*
7. *Anguilla anguilla*
8. *Barbus cyclolepis*
9. *Carassius carassius*
10. *Cobitis elongata*
11. *Eudontomyzon danfordi*
12. *Eudontomyzon mariae*
13. *Eudontomyzon stankokaramani*
14. *Eudontomyzon vladkyovi*
15. *Gymnocephalus baloni*
16. *Huso huso*
17. *Leucaspis delineatus*
18. *Misgurnus fossilis*
19. *Oxynoemacheilus burenschi*
20. *Pachychilon pictum*
21. *Rhodeus amarus*
22. *Rutilus karamani*
23. *Sabanejewia balcanica*

24. *Sabanejewia bulgarica*
25. *Salmo marmoratus*
26. *Telestes souffia*
27. *Tinca tinca*
28. *Umbra krameri*
29. *Zingel streber*
30. *Zingel zingel*

Spiders

1. *Centromerus cavernarum*
2. *Centromerus serbicus*
3. *Cicurina cicur*
4. *Coelotes inermis*
5. *Cybaeus balkanicus*
6. *Fageilla ensigera*
7. *Harpactea complicata*
8. *Histopona laeta*
9. *Leptophantes leprosus*
10. *Leptophantes speleorum*
11. *Porrhomma campbelli*
12. *Porrhomma convexum*
13. *Porrhomma lativulum*
14. *Tegenaria campestris*
15. *Tegenaria domestica*
16. *Tegenaria ferruginea*
17. *Tegenaria silvatica*

Opilions

1. *Cyphophthalmus ere*
2. *Cyphophthalmus klisurae*
3. *Cyphophthalmus noveillieri*
4. *Cyphophthalmus serbicus*
5. *Leiobunum rumelicum*
6. *Mitostoma cancellatum*
7. *Odiellus serbicus*
8. *Rilaena serbica*
9. *Trojanella serbica*

Pseudoscorpions

1. *Chthonius (Chthonius) bogovinae*
2. *Chthonius (Chthonius) ischnocheles*
3. *Chthonius (Chthonius) iugoslavicus*
4. *Chthonius (Chthonius) latidentatus*
5. *Chthonius (Chthonius) lesnik*
6. *Chthonius (Chthonius) persimilis*
7. *Chthonius (Chthonius) stevanovici*
8. *Chthonius (Ephippiochthonius) bidentatus*
9. *Chthonius (Ephippiochthonius) kemza*
10. *Chthonius (Ephippiochthonius) microtuberculatus*
11. *Chthonius (Ephippiochthonius) tetrachelatus*
12. *Chthonius (Globochthonius) pancici*
13. *Chthonius (Globochthonius) polychaetus*
14. *Chthonius (Globochthonius) purgo*
15. *Neobisium babinzub*
16. *Neobisium babusnicae*
17. *Neobisium carpaticum*
18. *Neobisium cephalonicum*
19. *Neobisium fusimanum*
20. *Neobisium macrodactylum*
21. *Neobisium meridienserbicium*
22. *Neobisium rajkodimitrijevici*
23. *Neobisium remyi*
24. *Neobisium stankovici*
25. *Neobisium stitkovense*
26. *Neobisium sylvaticum*
27. *Neobisium tarae*
28. *Roncus bauk*
29. *Roncus goljae*
30. *Roncus gruiæ*
31. *Roncus ivanjicae*
32. *Roncus jarilo*
33. *Roncus pannionius*
34. *Roncus pantici*
35. *Roncus parablothroides*
36. *Roncus pljakici*
37. *Roncus remesianensis*
38. *Roncus satoi*
39. *Roncus sotirovi*
40. *Roncus starivlahi*
41. *Roncus strahor*
42. *Roncus svanteviti*
43. *Roncus svarozici*
44. *Roncus svetavodae*
45. *Roncus talason*
46. *Roncus timacensis*
47. *Tyrannochthonius psoglavi*

Branchiopods

1. *Eoleptestheria spinosa*
2. *Imnadia banatica*
3. *Imnadia cristata*
4. *Imnadia pannonica*

Chilopods

1. *Lithobius lataknicensis*
2. *Lithobius trebinjanus*

Diplopods

1. *Apfelbeckia lendenfeldi miraculosa*
2. *Apfelbeckia subterranea*
3. *Apfelbeckia wohlberedti*

4. *Belbogosoma bloweri*
5. *Brachydesmus*
(*Absurdodesmus*)
jalzici
6. *Brachydesmus*
(*Brachydesmus*)
herzegowinensis
7. *Brachydesmus*
(*Brachydesmus*)
herzegowinensis
serbicus
8. *Brachydesmus*
(*Brachydesmus*)
troglobius
9. *Brachydesmus*
(*Stylobrachydesmus*)
avalae
10. *Brachydesmus*
(*Stylobrachydesmus*)
pancici
11. *Dyocerosoma*
drimicum
12. *Haasea intermedia*
13. *Lamellotyplus sotirovi*
14. *Leptoiulus*
(*Lamelloiulus*)
ivanjicae
15. *Perunosoma trojanica*
16. *Polydesmus*
(*Nomarchus*)
undeviginti
17. *Serboiulus deelemani*
18. *Serboiulus lucifugus*
19. *Serbosoma beljanicae*
20. *Serbosoma crucis*
21. *Serbosoma kucajensis*
22. *Serbosoma*
lazarevensis
23. *Serbosoma zagubiae*
24. *Svarogosoma*
bozidarcurcici
25. *Typhloius*
(*Typhloius*)
albanicus
26. *Typhloius*
(*Typhloius*)
nevoi
27. *Typhloius*
(*Typhloius*)
serborum

Colembols

1. *Arrhopalites zloti*
2. *Bonetogastrura*
cavicola
3. *Bourletiella albanica*
angelipunctata
4. *Bourletiella*
quadrangulata
5. *Drepanura deliblatica*
6. *Entomobrya*
djerdapensis
7. *Entomobrya pazaristei*
8. *Heteromurus uzicensis*
9. *Hymenaphorura*
uzicensis
10. *Hypogastrura sigillata*
11. *Megalothorax remyi*
12. *Onychiurus pancici*
13. *Onychiurus ravanicae*

14. *Onychiurus*
tetragrammatus
serbicus
15. *Onychiurus trojan*
16. *Onychiurus zloti*
17. *Plusiocampa denisi*
18. *Protaphorura*
zlatiborensis
19. *Pseudosinella*
ivanjicae
20. *Pseudosinella*
problematica
21. *Serbiella curcici*
22. *Sinella pulcherrima*
yugoslavica
23. *Subisotoma variabilis*
psammophila
24. *Tetracanthella*
syringae
25. *Trojanura mirocensis*

Insects

1. *Ablepton jugatus*
2. *Ablepton tumanense*
3. *Acrida ungarica*
ungarica
4. *Adalia bipunctata*
5. *Allogamus auricollis*
6. *Amara (Amara) wuki*
7. *Amauronyx caudatus*
8. *Amicroterys*
jugoslavicus
9. *Anasimya contracta*
10. *Anatis ocellata*
11. *Andreiniimon nuptialis*
12. *Anommatus mixtus*
13. *Anommatus serbicu*
14. *Apatura ilia*
15. *Apatura iris*
16. *Apatura metis*
17. *Arctophila superbiens*
18. *Argoptochus*
viridilimbatus
19. *Argynnis (Pandoriana)*
pandora
20. *Baetis melanonyx*
21. *Baetis pavidus*
22. *Barypeithes (Exomias)*
noesskei
23. *Bathyscidius*
comottiorum
24. *Bathyscidius serbicu*
25. *Bembidion*
(*Bembidionetolitzky*)
rhodopense
26. *Bembidion*
(*Sinechostictus*)
kosti
27. *Bembidion (Trepantes)*
maculatum serbicum
28. *Beraeodes minutus*
29. *Bihartrechus reufi*
30. *Boloria (Clossiana)*
selene
31. *Boloria (Clossiana)*
titania
32. *Brenthis ino*
33. *Bryaxis beroni*
34. *Bryaxis blacensis*

35. *Calathus (Calathus)*
bosnicus
36. *Calathus*
(*Neocalathus*)
albanicu
37. *Callimenus*
macrogaster
38. *Calosoma*
(*Microcallisthenes*)
pentheri
39. *Calosoma*
(*Microcallisthenes*)
relictum
40. *Carabus*
(*Archicarabus*)
montivagus velebiticus
41. *Carabus*
(*Archicarabus*)
nemoralis
pseudomontivagus
42. *Carabus*
(*Chaetocarabus*)
intricatus
montenegrinus
43. *Carabus*
(*Chaetocarabus*)
intricatus starensis
44. *Carabus (Eucarabus)*
ulrichii arrogans
45. *Carabus (Eucarabus)*
ulrichii ceremosnjenensis
46. *Carabus (Eucarabus)*
ulrichii fabrizioi
47. *Carabus (Eucarabus)*
ulrichii fastuosus
48. *Carabus (Eucarabus)*
ulrichii gornjakensis
49. *Carabus (Eucarabus)*
ulrichii kucajensis
50. *Carabus (Eucarabus)*
ulrichii nastasi
51. *Carabus (Eucarabus)*
ulrichii pernix
52. *Carabus (Eucarabus)*
ulrichii
pseudoarrogans
53. *Carabus (Eucarabus)*
ulrichii rhilensis
54. *Carabus (Eucarabus)*
ulrichii transdierna
55. *Carabus (Eucarabus)*
ulrichii werneri
56. *Carabus*
(*Megodontus*)
caelatus
sarajevoensi
57. *Carabus*
(*Megodontus*)
croaticus babinjensis
58. *Carabus*
(*Megodontus*)
croaticus bosiljcici
59. *Carabus*
(*Megodontus*)
croaticus kraetschmeri
60. *Carabus*
(*Megodontus*)
croaticus ljubetensis

61. *Carabus*
 (*Megodontus*)
 violaceus azurescens
 88. *Cheilosia balkana*
 89. *Cheilosia griseifacies*
 90. *Cheilosia insignis*
 91. *Cheilosia melanura*
 rubra
 137. *Graptus*
 shardaghensis
 62. *Carabus*
 (*Megodontus*)
 violaceus krajensis
 92. *Cheilosia schnabli*
 93. *Chorthippus oschei*
 94. *Chrysochraon dispar*
 95. *Chrysotoxum lineare*
 138. *Graptus triguttatus*
 balcanicus
 63. *Carabus*
 (*Megodontus*)
 violaceus meridianus
 96. *Coenonympha*
 gardeetta
 139. *Halticopterella slavica*
 64. *Carabus*
 (*Megodontus*)
 violaceus rilvensis
 97. *Colias caucasica*
 98. *Colias myrmidone*
 99. *Cucujus cinnaberinus*
 100. *Curcicia bolei*
 140. *Harpalus serbicu*
 65. *Carabus*
 (*Megodontus*)
 violaceus scombrosensis
 101. *Deltomerus*
 (*Deltomerus*) *nopcsai*
 141. *Helicopsyche bacescui*
 66. *Carabus*
 (*Megodontus*)
 violaceus scordiscus
 102. *Deltomerus*
 (*Paradeltomerus*)
 paradoxus paradoxus
 142. *Heringia larusi*
 67. *Carabus*
 (*Megodontus*)
 violaceus shardaghensis
 103. *Dicentrius stefanovici*
 143. *Hipparchia*
 (*Parahipparchia*)
 vulgensis
 68. *Carabus*
 (*Megodontus*)
 violaceus shljebensis
 104. *Dicrionterus*
 brevipennis serbicu
 144. *Javorella javorensis*
 69. *Carabus*
 (*Morphocarabus*)
 curtulus
 105. *Dinocras*
 megacephala
 145. *Javorella suvoborensis*
 70. *Carabus*
 (*Morphocarabus*)
 curtulus cerensis
 106. *Dodecastichus*
 cirrogaster
 146. *Kosaniniella javorensis*
 71. *Carabus*
 (*Morphocarabus*)
 curtulus koshanini
 107. *Drusus discolor*
 147. *Lathrobium*
 anophthalmum
 72. *Carabus*
 (*Morphocarabus*)
 curtulus tarensis
 108. *Drusus serbicu*
 148. *Lathrobium*
 anophthalmum
 73. *Carabus*
 (*Morphocarabus*)
 kollari semetricus
 109. *Duvalius*
 (*Biharotrechus*) *reufi*
 149. *Lathrobium bosnicum*
 obenbergeri
 74. *Carabus*
 (*Morphocarabus*)
 praecellens
 110. *Duvalius* (*Duvalius*)
 leonhardi matejkai
 150. *Lathrobium coicum*
 75. *Carabus*
 (*Morphocarabus*)
 scheidleri simulator
 111. *Duvalius* (*Duvalius*)
 sturanyi
 151. *Lathrobium cooteri*
 76. *Carabus*
 (*Morphocarabus*)
 scheidleri versicolor
 112. *Duvalius*
 (*Neoduvalius*)
 guidononveilleri
 152. *Lathrobium gracilior*
 77. *Carabus* (*Pachystus*)
 hungaricus
 frivaldszkanus
 113. *Egeotyphlus*
 (*Egeotyphlus*) *zecevici*
 153. *Lathrobium graniticole*
 78. *Carabus* (*Tachypus*)
 cancellatus apfelbecki
 114. *Empusa fasciata*
 154. *Lathrobium hlavaci*
 79. *Carabus* (*Tachypus*)
 cancellatus balcanicus
 115. *Epeorus*
 yousgslavicu
 155. *Lathrobium irenae*
 80. *Carabus* (*Tachypus*)
 cancellatus hypsobius
 116. *Epistrophella coronata*
 156. *Lathrobium knirschi*
 81. *Carabus*
 (*Trachycarabus*)
 scabriuscules bulgarus
 117. *Erebia alberganus*
 157. *Lathrobium*
 kopaonicanum
 82. *Cerambyx cerdo*
 118. *Erebia gorge*
 158. *Lathrobium matilei*
 83. *Chalcosyrphus piger*
 119. *Erebia manto*
 159. *Lathrobium ovcarensse*
 84. *Chalcosyrphus rufipes*
 120. *Erebia orientalis*
 160. *Lathrobium scardicum*
 85. *Chalcosyrphus valgus*
 121. *Erebia rhodopensis*
 161. *Lejops vittata*
 86. *Chamaesyrrhus*
 escorialensis
 122. *Esperarge climene*
 162. *Leptidea morsei*
 87. *Cheilosia alba*
 123. *Euchloe* (*Euchloe*)
 ausonia
 163. *Leptomastax*
 mehadiensis
 124. *Eumerus argyropus*
 164. *Leptusa jeanneli*
 125. *Eumerus basalis*
 165. *Leptusa kosmajensis*
 126. *Eumerus sinuatus*
 166. *Leptusa serbica*
 127. *Eumerus tauricus*
 167. *Libelloides macaronius*
 128. *Euphydryas maturna*
 168. *Limenitis populi*
 129. *Exocentrus stierlini*
 169. *Lithax niger*
 130. *Exochomus*
 quadripustulatus
 170. *Lopinga achine*
 131. *Formica* (*Formica*) *rufa*
 171. *Lucanus* (*Lucanus*)
 cervus
 132. *Gampsocleis*
 abbreviata
 172. *Lycaena dispar*
 133. *Gampsocleis glabra*
 173. *Maculinea alcon*
 134. *Glaucopsyche* (*Iolana*)
 iolas
 174. *Maculinea arion*
 135. *Graphoderus*
 bilineatus
 175. *Magdelainella*
 (*Derveniella*)
 136. *Graptus rhodopensis*
 176. *Magdelainella*
 (*Magdelainella*)
 hussoni
 177. *Magdelainella*
 (*Magdelainella*)
 nonveillieri
 178. *Magdelainella*
 (*Magdelainella*)
 orientalis
 179. *Magdelainella*
 (*Magdelainella*)
 serbica
 180. *Magdelainella*
 bozidarcurcici
 181. *Magdelainella hussoni*

182. *Magdalenella milojebrajkovicci*
 183. *Magdalenella mucawensis*
 184. *Magdalenella nikolateslai*
 185. *Magdalenella winkleri*
 186. *Magdalenella zivojindjordjevici*
 187. *Marthamea vitripennis*
 188. *Megastigmus synophris*
 189. *Melanargia larissa*
 190. *Melanogaster curvistylus*
 191. *Melitaea aurelia*
 192. *Melitaea diamina*
 193. *Merodon crassifemoris*
 194. *Merodon desuturinus*
 195. *Merodon haemorrhoidalis*
 196. *Molops (Molops) albanicus*
 197. *Molops (Molops) alpestris*
 198. *Molops (Molops) alpestris imitator*
 199. *Molops (Molops) alpestris vlasuljensis*
 200. *Molops (Molops) apfelbecki*
 201. *Molops (Molops) curtulus cakorensis*
 202. *Molops (Molops) osmanlis*
 203. *Molops (Molops) piceus balcanicus*
 204. *Molops (Molops) robustus parallelus*
 205. *Molops (Molops) robustus robustus*
 206. *Molops (Molops) rufipes klisuranus*
 207. *Molops (Molops) rufipes rufipes*
 208. *Molops (Molops) rufus*
 209. *Molops (Molops) simplex simplex*
 210. *Molops (Stenochoromus) montenegrinus koprivnikensis*
 211. *Morimus funereus*
 212. *Mormia (Mormia) ivankae*
 213. *Myrmecophilus nonveilleri*
 214. *Myrmeleon formicarius*
 215. *Myrmica sabuleti*
 216. *Myrmica scabrinodis*
 217. *Myrmosa moesica*
 218. *Nanophthalmus nonveilleri*
 219. *Nanophthalmus sericus*
 220. *Nebria (Alpaeus) attemsi*
 221. *Nebria (Alpaeus) bosnica prokletiensis*

 222. *Nebria (Alpaeus) bosnica sturanyi*
 223. *Nebria (Alpaeus) dahlii velebitica*
 224. *Nebria (Alpaeus) ganglbaueri*
 225. *Nebria (Alpaeus) speiseri*
 226. *Nebria (Alpaeus) telekiana*
 227. *Necrodes littoralis*
 228. *Nedinotus beogradensis*
 229. *Neochalcis osmicensis*
 230. *Neurocrassus serbiculus*
 231. *Nicrophorus germanicus*
 232. *Nymphaea antiopa*
 233. *Nymphaea vaualbum*
 234. *Nymphaea xanthomelas*
 235. *Omphreus (Omphreus) bischoffi*
 236. *Omphreus (Omphreus) gracilis*
 237. *Omphreus (Omphreus) morio albanicus*
 238. *Omphreus (Omphreus) morio serbiculus*
 239. *Omphreus (Omphreus) ovarensis*
 240. *Omphreus (Omphreus) serbooccidentalis*
 241. *Onconotus servillei*
 242. *Onthophagus (Furconthophagus) furcatus*
 243. *Ophthalmoniphetodes suvae*
 244. *Orgilus vasici*
 245. *Orthonevra gemmula*
 246. *Orthonevra montana*
 247. *Oryctes nasicornis*
 248. *Osmoderma eremita*
 249. *Otiorhynchus (Cryphiphoroides) ganglbaueri*
 250. *Otiorhynchus (Cryphiphoroides) mendax*
 251. *Otiorhynchus (Elechranus) relictus*
 252. *Otiorhynchus (Elechranus) splendidus*
 253. *Otiorhynchus (Ergiferanus) kopaonicensis*
 254. *Otiorhynchus (Ergiferanus) solitarius*
 255. *Otiorhynchus (Ergiferanus) tanycerus*

 256. *Otiorhynchus (Mesaniomus) cirrhocnemis*
 257. *Otiorhynchus (Mesaniomus) prisrensis*
 258. *Otiorhynchus (Otiolehus) inunctus*
 259. *Otiorhynchus (Pendragon) serbiculus*
 260. *Otiorhynchus (Pirostovedus) bosnicus obtusidens*
 261. *Otiorhynchus (Prilisvanus) albanicus albanicus*
 262. *Otiorhynchus (Prilisvanus) albanicus torosus*
 263. *Otiorhynchus (Prilisvanus) cymophanus*
 264. *Otiorhynchus (Prilisvanus) lumensis*
 265. *Otiorhynchus (Prilisvanus) malissorum*
 266. *Otiorhynchus (Provadilus) liliputanus*
 267. *Otiorhynchus (Stupamacus) krueperi armipes*
 268. *Otiorhynchus (Stupamacus) macedonicus conorhynchus*
 269. *Otiorhynchus (Stupamacus) shardaghensis*
 270. *Palingenia longicauda*
 271. *Palpares libelluloides*
 272. *Panimerus serbiculus*
 273. *Papilio machaon*
 274. *Paraduvalius devojensis*
 275. *Paraduvalius georgevitchi*
 276. *Paraduvalius stankovitchi*
 277. *Paraduvalius winkleri*
 278. *Parnassius apollo*
 279. *Parnassius mnemosyne*
 280. *Pedestredorcadion ljubetense*
 281. *Pheggomisetes globiceps*
 282. *Pheggomisetes ninae*
 283. *Pholeuonopsis (Pholeuonopsis) magdalainei*
 284. *Pholeuonopsis cvijici*
 285. *Pholeuonopsis zlatiborensis*
 286. *Pholidoptera aptera*
 287. *Pholidoptera transylvanica*

288. *Phyllobius*
 (*Metaphylobius*)
 ganglbaueri
 289. *Pieris brassicae*
 290. *Pilemia tigrina*
 291. *Pipizella zloti*
 292. *Platycleis (Montana)*
 montana miliae
 293. *Platycleis (Tessellana)*
 veyseii
 294. *Plebeius (Aricia)*
 anteros
 295. *Plebeius (Plebeius)*
 argyrognomon
 296. *Plebeius (Vacciniina)*
 optilete
 297. *Plinthus*
 (*Plinthomeleus*)
 dardanicus
 298. *Plinthus (Plinthus)*
 setosus
 299. *Poecilimon ornatus*
 300. *Poecilus (Poecilus)*
 rebeli
 301. *Polygona egea*
 302. *Polyommatus eroides*
 303. *Potamonectus*
 macedonicus
 304. *Proleonhardella*
 hirtella
 305. *Protamaurops*
 serbiclus
 306. *Protonemura lateralis*
 307. *Protonemura meyeri*
 308. *Protonemura praecox*
 309. *Psarus abdominalis*
 310. *Pseudophilotes*
 311. *Pseudophilotes*
 vicrama
 312. *Psilota nana*
 313. *Pterosichus*
 (*Pterostichus*)
 lumensis qubetensis
 314. *Pterostichus*
 (*Feronidius*) *serbiclus*
 315. *Pterostichus*
 (*Platypterus*)
 ottomanus ottomanus
 316. *Pterostichus*
 (*Pterostichus*) *pentheri*
 317. *Pterostichus*
 (*Pterostichus*) *reiseri*
 318. *Pyrgus andromedae*
 319. *Pyrgus sidae*
 320. *Rascioduvalius cvijici*
 321. *Rascioduvalius*
 stopicensis
 322. *Rascioduvalius*
 zlatiborensis
 323. *Remyella javorensis*
 324. *Remyella raskae*
 325. *Remyella scaphoides*
 boreensis
 326. *Remyella scaphoides*
 droveniki
 327. *Remyella scaphoides*
 hussoni
 328. *Remyella scaphoides*
 propiformis
329. *Remyella scaphoides*
 scaphoides
 330. *Rhyacophila obtusa*
 331. *Rosalia alpina*
 332. *Saga pedo*
 333. *Satyrium acaciae*
 334. *Satyrium w-album*
 335. *Satyrus ferula*
 336. *Sciaphobus*
 (*Neosciaphobus*)
 balcanicus
 337. *Sciaphobus*
 (*Neosciaphobus*)
 scheibeli
 338. *Serboduvalius*
 dragacevensis
 339. *Serboduvalius*
 starivlahi
 340. *Serboleonhardella*
 remyi
 341. *Sphegina sublatifrons*
 342. *Sphiximorpha*
 binominate
 343. *Sphiximorpha*
 subsessilis
 344. *Sialia phlomidis*
 345. *Stethophyma grossum*
 346. *Synuchidius*
 ganglbaueri
 347. *Taeniopteryx hubaulti*
 348. *Taeniopteryx nebulosa*
 349. *Tapinopterus*
 (*Tapinopterus*)
 kaufmanni kaufmanni
 350. *Tapinopterus*
 (*Tapinopterus*)
 kaufmanni winkleri
 351. *Tapinopterus*
 (*Tapinopterus*) *miridita*
 miridita
 352. *Tentyria frivaldszkii*
 353. *Tettigonia cantans*
 354. *Thecla betulae*
 355. *Theophilea*
 subcylindricollis
 356. *Thremma anomalum*
 357. *Trechus (Trechus)*
 irenis
 358. *Trechus albanicus*
 359. *Trechus babinjensis*
 360. *Trechus cardioderus*
 transdanubiensis
 361. *Trechus centralis*
 362. *Trechus kobingeri*
 363. *Trechus priapus*
 medius
 364. *Trechus priapus*
 serbiclus
 365. *Trechus pulchellus*
 koprivnicensis
 366. *Trechus pulchellus*
 ventriosus
 367. *Trechus subnotatus*
 ljubetensis
 368. *Trichopsomyia lucida*
 369. *Troglophilus*
 brevicauda
 370. *Troglophilus serbiclus*
 371. *Ubychia ellipsoidalis*
372. *Zabrus (Pelor)*
 albanicus albanicus
 373. *Zabrus (Pelor)*
 albanicus latifianus
 374. *Zabrus (Pelor)*
 angusticollis
 375. *Zabrus (Pelor)*
 balcanicus
 rhodopensis
 376. *Zerynthia polyxena*
- Malacostraca**
1. *Alpioniscus metohicus*
 2. *Astacus astacus*
 3. *Austropotamobius torrentium*
 4. *Bogidiella skopqensis*
 5. *Hyloniscus kopaonicensis*
 6. *Hyloniscus kosovensis*
 7. *Hyloniscus stankovici*
 8. *Macedoniscus metohicus*
 9. *Microcharon profundalis beranensis*
 10. *Microcharon profundalis kosovensis*
 11. *Microcharon profundalis profundalis*
 12. *Microtitanethes licodrensis*
 13. *Niphargus adbiptus*
 14. *Niphargus deeleanae*
 15. *Niphargus hrabei*
 16. *Niphargus stygius remyi*
 17. *Niphargus tauri kragujevensis*
 18. *Niphargus valachicus*
 19. *Proasellus anophthalmus serbiclus*
 20. *Proasellus slavus serbiae*
 21. *Proasellus slavus zeii*
 22. *Protelsonia gjorgjevici crmnicus*
 23. *Protelsonia gjorgjevici gjorgjevici*
 24. *Sphaeromides serbica*
 25. *Trichoniscoides mladenii*
 26. *Trichoniscus bogovinae*
 27. *Trichoniscus bononiensis*
 28. *Trichoniscus buturovici*
 29. *Trichoniscus licodrensis*
 30. *Trichoniscus naissensis*
 31. *Trichoniscus pancici*
 32. *Trichoniscus serbiclus*
 33. *Trichoniscus serboorientalis*
 34. *Trichoniscus sotirovi*
 35. *Trichoniscus timocensis*

Moluscs

1. *Balea (Alinda) biplicata balcanica*
2. *Balea (Alinda) biplicata pancici*
3. *Balea (Alinda) biplicata urosevici*
4. *Balea (Alinda) biplicata vlasinensis*
5. *Balea (Alinda) pancici*
6. *Balea (Alinda) wagneri stojicevici*
7. *Balea (Balea) perversa*
8. *Belgrandiella bunarbasa*
9. *Belgrandiella serbica*
10. *Bulgarica (Bulgarica) moellendorffii banjana*
11. *Bulgarica (Bulgarica) moellendorffii moellendorffii*
12. *Bulgarica (Bulgarica) stolii*
13. *Bulgarica (Pavlovicia) pavlovici pavlovici*
14. *Bulgarica (Pavlovicia) pavlovici purpurascens*
15. *Bythinella drimica alba*
16. *Bythinella nonveillieri*
17. *Bythinella opaca luteola*
18. *Bythinella pesterica*
19. *Bythinella serborientalis*
20. *Caringera eximia*
21. *Chondrina spelta serbica*
22. *Grossuana euxina euxina*
23. *Grossuana euxina remesiana*
24. *Grossuana euxina serbica*
25. *Helicigona kollari*
26. *Helicigona trizona balcanica*
27. *Helicigona trizona inflata*
28. *Helicigona trizona ljubetensis*
29. *Helix (Helix) dormitoris hajlensis*
30. *Helix (Helix) dormitoris kolaschinensis*
31. *Helix (Helix) dormitoris stolacensis*
32. *Helix (Helix) vladica*
33. *Herilla bosniensis bosniensis*
34. *Herilla bosniensis kusceri*
35. *Herilla bosniensis semistriata*
36. *Herilla jabucica excedens*

37. *Herilla ziegleri accedens*
38. *Herilla ziegleri amaliae*
39. *Herilla ziegleri jaeckeli*
40. *Herilla ziegleri limana*
41. *Herilla ziegleri rascana*
42. *Herilla ziegleri tarensis*
43. *Iglica (Raphica) illyrica*
44. *Lacinaria pygmea*
45. *Lithoglyphus apertus*
46. *Macedonica frauendorfii frauendorfii*
47. *Macedonica frauendorfii moellendorffii*
48. *Macedonica frauendorfii occidentalis*
49. *Macedonica frauendorfii pavlovianae*
50. *Macedonica pirotana*
51. *Montenegrina janinensis sporadica*
52. *Orientalina curta pivensis*
53. *Sarajana apfelbecki driniana*
54. *Segmentina nitida*
55. *Soosia diodonta*
56. *Terranigra kosovica*
57. *Unio crassus*
58. *Vertigo angustior*
59. *Vestia (Brabenecia) ranojevici*
60. *Vestia (Vestiella) roschitzi minima*
61. *Vestia (Vestiella) roschitzi trigonostoma*

Oligochaets

1. *Cernosvitovia biserialis*
2. *Cernosvitovia crnicae*
3. *Cernosvitovia dudichi*
4. *Cernosvitovia silicata*
5. *Dendrobaena jastrebensis*

Fungi

1. *Albatrellus ovinus*
2. *Amanita vittadini*
3. *Battarea phalloides*
4. *Boletus dupainii*
5. *Boletus impolitus*
6. *Boletus regius*
7. *Boletus rhodoxanthus*
8. *Boletus satanas*
9. *Catathelasma imperiale*
10. *Entoloma bloxamii*

Lichens

1. *Alectoria sarmentosa*
2. *Anaptychia crinalis*
3. *Cetrelia cetrariooides*
4. *Collema fragrans*
5. *Collema nigrescens*
6. *Evernia divaricata*
7. *Fuscopannaria saubinetii*
8. *Graphis elegans*

9. *Heterodermia speciosa*
10. *Hypogymnia vittata*
11. *Lempholemma polyanthes*
12. *Leprocaulon microscopicum*
13. *Leptogium hildenbrandii*
14. *Leptogium saturninum*
15. *Leptogium teretiusculum*
16. *Letharia vulpina*
17. *Lobaria amplissima*
18. *Lobaria scrobiculata*
19. *Menegazzia terebrata*
20. *Moelleropsis nebulosa*
21. *Nephroma bellum*
22. *Normandina pulchella*
23. *Pannaria rubiginosa*
24. *Parmotrema chinense*
25. *Peltigera collina*
26. *Peltigera malacea*
27. *Physcia biziana*
28. *Physcia leptalea*
29. *Physcia tribacia*
30. *Sclerophora peronella*
31. *Solorina spongiosa*
32. *Sphaerophorus globosus*
33. *Thelotrema lepadinum*
34. *Trapeliopsis wallrothii*
35. *Tuckneraria laureri*
36. *Usnea longissima*
37. *Usnea scabrata*

Bryophytes

1. *Aloina obliquifolia*
2. *Andreaea rothii*
3. *Anoectangium sendtnerianum*
4. *Anomodon rugelii*
5. *Buxbaumia viridis*
6. *Encalypta serbica*
7. *Entostodon hungaricus*
8. *Hilpertia velenovskyi*
9. *Mannia fragrans*
10. *Meesia triquetra*
11. *Orthotrichum philibertii*
12. *Orthotrichum scanicum*
13. *Pterygoneurum compactum*
14. *Pterygoneurum lamellatum*
15. *Pterygoneurum subsessile*
16. *Pyramidula tetragona*
17. *Scapania aequiloba*
18. *Scapania lingulata*
19. *Sphagnum spp.*
20. *Splachnum sphaericum*
21. *Tayloria froelichiana*
22. *Timmiella anomala*
23. *Tomentypnum nitens*
24. *Trichocolea tomentella*
25. *Trochobryum carniolicum*

Ferns

1. *Adiantum capillus-veneris*
2. *Asplenium adulterinum*
3. *Botrychium multifidum*
4. *Cystopteris alpina*
5. *Cystopteris montana*
6. *Diphasiastrum alpinum*
7. *Diphasiastrum complanatum*
8. *Dryopteris affinis*
9. *Dryopteris cristata*
10. *Dryopteris dilatata*
11. *Dryopteris submontana*
12. *Equisetum fluviatile*
13. *Lycopodium annotinum subsp. annotinum*
14. *Lycopodium clavatum subsp. clavatum*
15. *Marsilea quadrifolia*
16. *Matteuccia struthiopteris*
17. *Notholaena marianthae*
18. *Oreopteris limbosperma*
19. *Phegopteris connectilis*
20. *Pilularia globulifera*
21. *Polystichum braunii*
22. *Thelypteris palustris subsp. palustris*

Flower plants

1. *Abies borisii-regis*
2. *Acer heldreichii*
3. *Acer hyrcanum subsp. intermedium*
4. *Achillea alexandri-regis*
5. *Achillea chrysocoma*
6. *Achillea ochroleuca*
7. *Achillea pindicola subsp. corabensis*
8. *Achillea pseudopectinata*
9. *Achillea ptarmica*
10. *Aconitum anthora*
11. *Aconitum toxicum subsp. toxicum*
12. *Aconitum variegatum subsp. nasutum*
13. *Adenophora liliifolia*
14. *Adonis vernalis*
15. *Agrimonia eupatoria subsp. grandis*
16. *Aldrovanda vesiculosa*
17. *Alisma gramineum*
18. *Alkanna nonneiformis*
19. *Alkanna pulmonaria*
20. *Alkanna scardica*
21. *Alkanna tinctoria subsp. tinctoria*
22. *Allium atroviolaceum*
23. *Allium cyrilli*
24. *Allium ericetorum*
25. *Allium flavum subsp. tauricum*
26. *Allium fuscum*
27. *Allium guttatum subsp. dalmaticum*
28. *Allium pallens subsp. tenuiflorum*
29. *Allium paniculatum subsp. marginatum*
30. *Allium rhodopeum*
31. *Alnus alnobetula subsp. alnobetula*
32. *Althaea kragujevicensis*
33. *Althaea vrawensis*
34. *Alyssum corymbosoides*
35. *Alyssum linifolium*
36. *Alyssum montanum subsp. serbicum*
37. *Amphoricarpos autariatus*
38. *Anagallis minima*
39. *Anchusa ochroleuca*
40. *Androsace elongata*
41. *Androsace lactea subsp. lactea*
42. *Anemone apennina*
43. *Anemone sylvestris*
44. *Angelica palustris*
45. *Anthyllis aurea*
46. *Aquilegia grata*
47. *Aquilegia pancicii*
48. *Arabis bryoides*
49. *Arabis nova*
50. *Arabis scopoliana*
51. *Arctostaphylos alpinus*
52. *Aristolochia merxmulleri*
53. *Armoracia macrocarpa*
54. *Artemisia austriaca*
55. *Artemisia pancicii*
56. *Asparagus pseudoscaber*
57. *Asperula doerfleri*
58. *Asperula setulosa*
59. *Asperula tenella*
60. *Asphodeline lutea*
61. *Astragalus angustifolius subsp. angustifolius*
62. *Astragalus dasyanthus*
63. *Astragalus exscapus subsp. exscapus*
64. *Astragalus fialae*
65. *Astragalus glycyphylloides subsp. sericus*
66. *Astragalus hypoglottis subsp. gremliei*
67. *Astragalus monspessulanus subsp. illyricus*
68. *Astragalus sulcatus*
69. *Astragalus varius*
70. *Astragalus wilmottianus*
71. *Aubrieta gracilis subsp. scardica*

72. *Aurinia rupestris*
 73. *Ballota hispanica*
 subsp. *macedonica*
 74. *Barbarea vulgaris*
 subsp. *lepuznicana*
 75. *Bassia sedoides*
 76. *Betula pubescens*
 subsp. *carpatica*
 77. *Blackstonia perfoliata*
 subsp. *perfoliata*
 78. *Bornmuellera dieckii*
 79. *Bulbocodium*
 versicolor
 80. *Bupleurum*
 commutatum subsp.
 glaucocarpum
 81. *Bupleurum longifolium*
 subsp. *longifolium*
 82. *Bupleurum*
 ranunculoides
 83. *Buxus sempervirens*
 84. *Cachrys alpina*
 85. *Cachrys cristata*
 86. *Cachrys ferulacea*
 87. *Caldesia parnassiifolia*
 88. *Callitricha palustris*
 89. *Callitricha stagnalis*
 90. *Calluna vulgaris*
 subsp. *vulgaris*
 91. *Campanula calycialata*
 92. *Campanula scutellata*
 93. *Campanula*
 secundiflora
 94. *Campanula thrysoides*
 subsp. *thrysoides*
 95. *Camphorosma*
 monspeliaca
 96. *Cardamine amara*
 subsp. *balcanica*
 97. *Cardamine carnosa*
 98. *Cardamine*
 glanduligera
 99. *Cardamine trifolia*
 100. *Cardamine waldsteinii*
 101. *Carduus ramosissimus*
 102. *Carex limosa*
 103. *Carex secalina*
 104. *Carum graecum*
 subsp. *serpentinicum*
 105. *Centaurea derventana*
 106. *Centaurea finazzeri*
 107. *Centaurea graeca*
 108. *Centaurea*
 melanocephala
 109. *Centaurea ogwanoffii*
 110. *Centaurea orientalis*
 111. *Centaurea scabiosa*
 subsp. *sadleriana*
 112. *Centaurea tauschieri*
 113. *Centranthus*
 longiflorus subsp.
 junceus
 114. *Cephalaria flava*
 subsp. *flava*
 115. *Cephalaria*
 pastriensis
 116. *Cerastium dinaricum*
 117. *Cerastium*
 neoscardicum
118. *Ceratocephala falcata*
 subsp. *falcata*
 119. *Ceratocephala*
 testiculata
 120. *Chorispora tenella*
 121. *Cicuta virosa*
 122. *Cirsium boujartii*
 subsp. *boujartii*
 123. *Cirsium*
 brachycephalum
 124. *Cirsium heterophyllum*
 125. *Cirsium heterotrichum*
 126. *Cirsium tymphaeum*
 127. *Cirsium waldsteinii*
 128. *Cladium mariscus*
 subsp. *mariscus*
 129. *Clematis alpina* subsp.
 alpina
 130. *Coeloglossum viride*
 subsp. *viride*
 131. *Colchicum arenarium*
 132. *Colchicum bivonae*
 133. *Colchicum*
 macedonicum
 134. *Consolida*
 uechtritziana
 135. *Convolvulus*
 betonicifolius subsp.
 betonicifolius
 136. *Convolvulus boissieri*
 subsp. *parnassicus*
 137. *Corallorrhiza trifida*
 138. *Coronilla vaginalis*
 139. *Crambe tataria*
 140. *Crataegus heldreichii*
 141. *Crepis baldaccii*
 subsp. *albanica*
 142. *Crepis bertiscea*
 143. *Crepis macedonica*
 144. *Crepis pannonica*
 subsp. *pannonica*
 145. *Crocus banaticus*
 146. *Crocus dalmaticus*
 147. *Crocus olivieri* subsp.
 olivieri
 148. *Crocus pallasii* subsp.
 pallasii
 149. *Crocus rujanensis*
 150. *Cyperus longus* subsp.
 longus
 151. *Cyperus pannonicus*
 152. *Cyperus rotundus* L.
 subsp. *rotundus*
 153. *Cypripedium calceolus*
 154. *Cytisus absinthioides*
 subsp. *absinthioides*
 155. *Cytisus albus* subsp.
 albus
 156. *Cytisus purpureus*
 157. *Cytisus pygmaeus*
 158. *Dactylorhiza cordigera*
 subsp. *bosniaca*
 159. *Dactylorhiza cordigera*
 subsp. *cordigera*
 160. *Dactylorhiza fistulosa*
 161. *Dactylorhiza incarnata*
 subsp. *incarnata*
 162. *Dactylorhiza maculata*
 163. *Dactylorhiza saccifera*
164. *Daphne laureola*
 subsp. *laureola*
 165. *Dianthus behriorum*
 166. *Dianthus diutinus*
 167. *Dianthus*
 giganteiformis subsp.
 kladowanus
 168. *Dianthus moesiacus*
 169. *Dianthus*
 monadelphus subsp.
 pallens
 170. *Dianthus nitidus*
 subsp. *lakusicii*
 171. *Dianthus scardicus*
 172. *Dianthus serotinus*
 173. *Dianthus superbus*
 subsp. *superbus*
 174. *Dianthus*
 trifasciculatus subsp.
 trifasciculatus
 175. *Dianthus viridescens*
 176. *Dianthus viscidus*
 177. *Digitalis viridiflora*
 178. *Dioscorea balcanica*
 179. *Doronicum*
 hungaricum
 180. *Doronicum orientale*
 181. *Draba nemorosa*
 182. *Draba siliquosa*
 183. *Dracocephalum*
 ruyschiana
 184. *Drosera rotundifolia*
 185. *Drymocallis*
 malacophylla
 186. *Edraianthus serbicus*
 187. *Elatine hydropiper*
 subsp. *hydropiper*
 188. *Elatine triandra*
 189. *Eleocharis parvula*
 190. *Epipactis atrorubens*
 subsp. *atrorubens*
 191. *Epipactis atrorubens*
 subsp. *borbasii*
 192. *Epipactis microphylla*
 193. *Epipactis palustris*
 194. *Epipogium aphyllum*
 195. *Eranthis hiemalis*
 196. *Erigeron epiroticus*
 197. *Eriophorum gracile*
 subsp. *gracile*
 198. *Eryngium planum*
 199. *Eryngium serbicum*
 200. *Erysimum canum*
 201. *Erysimum*
 crepidifolium
 202. *Erysimum korabense*
 203. *Erysimum*
 marschallianum
 204. *Erysimum welcevii*
 205. *Euphorbia angulata*
 206. *Euphorbia*
 montenegrina
 207. *Fagus sylvatica*
 subsp. *orientalis*
 208. *Fibigia clypeata*
 209. *Fimbristylis*
 bisumbellata
 210. *Forsythia europaea*
 211. *Fraxinus pallisiae*

212. *Fritillaria macedonica*
 213. *Gagea fragifera*
 214. *Gagea minima*
 215. *Galatella villosa*
 216. *Galium kitaibelianum*
 217. *Galium rhodopeum*
 218. *Genista hassertiana*
 subsp. *hassertiana*
 219. *Genista nissana*
 220. *Gentiana acaulis*
 221. *Gentiana dinarica*
 222. *Gentiana nivalis*
 223. *Gentiana*
 pneumonanthe subsp.
 nopcsae
 224. *Geum bulgaricum*
 225. *Geum rhodopeum*
 226. *Gladiolus communis*
 subsp. *communis*
 227. *Gladiolus imbricatus*
 228. *Gladiolus palustris*
 229. *Glycyrrhiza*
 glandulifera
 230. *Goniolimon incanum*
 231. *Goodyera repens*
 232. *Groenlandia densa*
 233. *Gymnadenia frivaldii*
 234. *Gymnadenia nigra*
 235. *Gypsophila fastigiata*
 subsp. *arenaria*
 236. *Haplophyllum*
 suaveolens
 237. *Helichrysum*
 arenarium subsp.
 arenarium
 238. *Helichrysum plicatum*
 subsp. *plicatum*
 239. *Heliosperma nikolicii*
 240. *Heliosperma oliverae*
 241. *Heliosperma pusillum*
 subsp. *monachorum*
 242. *Helleborus*
 purpurascens
 243. *Heracleum orphanidis*
 244. *Herminium monorchis*
 245. *Hesperis matronalis*
 subsp. *nivea*
 246. *Hieracium albopellitum*
 247. *Hieracium amphithales*
 248. *Hieracium*
 andrasovszkyi subsp.
 cremophilum
 249. *Hieracium*
 andrasovszkyi subsp.
 doerfleri
 250. *Hieracium*
 andrasovszkyi subsp.
 kobilicanum
 251. *Hieracium auritum*
 252. *Hieracium balkanicum*
 253. *Hieracium bertisceum*
 254. *Hieracium bifidum*
 subsp.
 pallescentisimile
 255. *Hieracium bifidum*
 subsp. *stolanum*
 256. *Hieracium bjeluschae*
 subsp.
 tommasiniiiforme
 257. *Hieracium bulgaricum*
 258. *Hieracium*
 bupleuroides subsp.
 malacosericum
 259. *Hieracium*
 coloriscapum subsp.
 stenopyllophorum
 260. *Hieracium djimilense*
 subsp.
 brachytrichoiophyes
 261. *Hieracium djimilense*
 subsp. *cordatifrons*
 262. *Hieracium*
 durmitoricum
 263. *Hieracium*
 erythrocarpum subsp.
 aculeatissimum
 264. *Hieracium*
 erythrocarpum subsp.
 kurvalae
 265. *Hieracium gaudryi*
 subsp. *cernyanum*
 266. *Hieracium gaudryi*
 subsp. *hayekianum*
 267. *Hieracium grossianum*
 subsp. *schefferianum*
 268. *Hieracium guentheri-*
 beckii subsp.
 portentosum
 269. *Hieracium*
 guglerianum subsp.
 telekianum
 270. *Hieracium heldreichii*
 subsp.
 pseudopilosissimum
 271. *Hieracium jankae*
 subsp. *marmoreiforme*
 272. *Hieracium jurassicum*
 subsp. *papyraceum*
 273. *Hieracium*
 macrodontoides
 subsp. *gigantophyllum*
 274. *Hieracium*
 markovanum
 275. *Hieracium marmoreum*
 subsp. *marmoreum*
 276. *Hieracium marmoreum*
 subsp. *pavlovicii*
 277. *Hieracium murorum*
 subsp. *bistricense*
 278. *Hieracium murorum*
 subsp. *valdecoratum*
 279. *Hieracium*
 naegelianum subsp.
 qubotenicum
 280. *Hieracium oxyodon*
 subsp. *oxyodon*
 281. *Hieracium pannosum*
 282. *Hieracium pannosum*
 subsp. *doerflerianum*
 283. *Hieracium*
 pseudobifidum subsp.
 zjebense
 284. *Hieracium*
 pseudosparsum
 285. *Hieracium racemosum*
 subsp. *chaetotrichum*
 286. *Hieracium racemosum*
 subsp. *semigrisescens*
287. *Hieracium schefferi*
 288. *Hieracium*
 scheppigianum subsp.
 scheppigianum
 289. *Hieracium*
 sericophyllum subsp.
 acropolioscapum
 290. *Hieracium sparsum*
 subsp. *ipekanum*
 291. *Hieracium sparsum*
 subsp. *livadicanum*
 292. *Hieracium sparsum*
 subsp. *pilosifrons*
 293. *Hieracium sparsum*
 subsp. *staraeplaninae*
 294. *Hieracium transiens*
 295. *Hieracium velenovskyi*
 296. *Hieracium*
 wiesbaurianum subsp.
 livadicae
 297. *Himantoglossum*
 298. *Hippuris vulgaris*
 299. *Hottonia palustris*
 300. *Hymenolobus*
 procumbens subsp.
 procumbens
 301. *Hypocoum*
 pseudograndiflorum
 302. *Hypericum*
 hyssopifolium
 303. *Hypericum montbretii*
 304. *Hypericum olympicum*
 305. *Ilex aquifolium*
 306. *Iris aphylla* subsp.
 aphylla
 307. *Iris humilis* subsp.
 arenaria
 308. *Iris sibirica*
 309. *Iris sintenisii*
 310. *Iris spuria* subsp.
 spuria
 311. *Jacobaea othonnae*
 312. *Jacobaea pancicii*
 313. *Juncus capitatus*
 314. *Juncus triglumis*
 subsp. *triglumis*
 315. *Juniperus foetidissima*
 316. *Juniperus sabina*
 317. *Kitaibela vitifolia*
 318. *Klasea lycopifolia*
 319. *Klasea radiata* subsp.
 radiata
 320. *Knautia pancicii*
 321. *Knautia sarajeensis*
 322. *Laburnum alpinum*
 323. *Laburnum*
 anagyroides
 324. *Lactuca aurea*
 325. *Lactuca hispida*
 326. *Lathyrus grandiflorus*
 327. *Lathyrus palustris*
 328. *Lathyrus pancicii*
 329. *Lathyrus pannonicus*
 subsp. *pannonicus*
 330. *Legousia falcata*
 331. *Legousia hybrida*
 332. *Lepidium*
 cartilagineum
 333. *Ligusticum albanicum*

334. *Lilium carniolicum*
 subsp. *jankae*
 335. *Linaria simplex*
 336. *Linum elegans*
 337. *Linum nodiflorum*
 338. *Listera cordata*
 339. *Loiseleuria procumbens*
 340. *Lunaria telekiana*
 341. *Lysimachia atropurpurea*
 342. *Malus florentina*
 343. *Menyanthes trifoliata*
 344. *Micromeria albanica*
 345. *Minuartia bulgarica*
 346. *Minuartia doerfleri*
 347. *Minuartia hirsuta*
 subsp. *frutescens*
 348. *Myricaria ernestii-mayeri*
 349. *Nepeta tanjensis*
 350. *Nonea pallens*
 351. *Nuphar lutea* subsp.
 lutea
 352. *Nymphaea alba*
 353. *Onobrychis pindicola*
 354. *Ophrys apifera*
 355. *Ophrys fuciflora*
 subsp. *fuciflora*
 356. *Ophrys mammosa*
 357. *Ophrys oestrifera*
 358. *Ophrys sicula*
 359. *Ophrys sphegoides*
 360. *Opopanax hispidus* ()
 361. *Orchis coriophora*
 subsp. *coriophora*
 362. *Orchis laxiflora*
 363. *Orchis mascula* subsp.
 mascula
 364. *Orchis mascula* subsp.
 speciosa
 365. *Orchis militaris*
 366. *Orchis pallens*
 367. *Orchis palustris*
 368. *Orchis papilionacea*
 subsp. *papilionacea*
 369. *Orchis spitzelii*
 370. *Orchis ustulata*
 371. *Ornithogalum orthophyllum* subsp.
 orbicum
 372. *Oxytropis halleri*
 subsp. *korabensis*
 373. *Paeonia daurica*
 374. *Paeonia officinalis*
 subsp. *banatica*
 375. *Paeonia officinalis*
 subsp. *officinalis*
 376. *Paeonia peregrina*
 377. *Paeonia tenuifolia*
 378. *Paramoltzia doerfleri*
 379. *Parietaria lusitanica*
 subsp. *lusitanica*
 380. *Pedicularis brachyodonta*
 381. *Pedicularis ernestii-mayeri*
 382. *Pedicularis friderici-augusti*
 383. *Pedicularis oederi*
 384. *Pedicularis palustris*
 subsp. *palustris*
 385. *Peganum harmala*
 386. *Peucedanum aequiradum*
 387. *Peucedanum minutifolium*
 388. *Phlomis herba-venti*
 subsp. *pungens*
 389. *Picea omorika*
 390. *Pinguicula crystallina*
 subsp. *hirtiflora*
 391. *Pinus heldreichii*
 392. *Pinus mugo* subsp.
 mugo
 393. *Pinus nigra* subsp.
 pallasiana
 394. *Pinus peuce*
 395. *Plantago schwarzengergiana*
 396. *Platanthera chlorantha*
 subsp. *chlorantha*
 397. *Plumbago europaea*
 398. *Podocytisus caramanicus*
 399. *Polemonium caeruleum*
 400. *Polygala doerfleri*
 401. *Polygonum albanicum*
 402. *Potamogeton acutifolius*
 403. *Potamogeton nodosus*
 404. *Potamogeton obtusifolius*
 405. *Potamogeton pusillus*
 subsp. *pusillus*
 406. *Potamogeton trichoides*
 407. *Potamogeton x zizii*
 408. *Potentilla doerfleri*
 409. *Potentilla niciciei*
 410. *Primula auricula*
 411. *Primula halleri*
 412. *Prunus fruticosa*
 413. *Prunus laurocerasus*
 414. *Pseudorchis albida*
 subsp. *albida*
 415. *Pulsatilla alpina* subsp.
 apiifolia
 416. *Pulsatilla montana*
 417. *Pulsatilla pratensis*
 418. *Pulsatilla vernalis*
 419. *Pulsatilla vulgaris*
 subsp. *grandis*
 420. *Pyrola chlorantha*
 421. *Pyrola media*
 422. *Pyrola minor* subsp.
 minor
 423. *Pyrola rotundifolia*
 424. *Pyrus elaeagrifolia*
 425. *Pyrus nivalis*
 426. *Quercus trojana*
 subsp. *trojana*
 427. *Ramonda nathaliae*
 428. *Ramonda serbica*
 429. *Ranunculus aquatilis*
 430. *Ranunculus cassubicus* subsp.
 cassubicus
 431. *Ranunculus flabellifolius*
 432. *Ranunculus illyricus*
 433. *Ranunculus incomparabilis*
 434. *Ranunculus lateriflorus*
 435. *Ranunculus lingua*
 436. *Ranunculus ophioglossifolius*
 437. *Ranunculus paludosus*
 438. *Ranunculus parviflorus*
 439. *Ranunculus rionii*
 440. *Ranunculus seguieri*
 subsp. *montenegrini*
 441. *Rhamnus pumila*
 442. *Rhinanthus melampyroides*
 443. *Rhododendron*
 444. *Rindera umbellata*
 445. *Romulea bulbocodium*
 446. *Rubus ipecensis*
 447. *Ruta graveolens*
 448. *Salicornia europea*
 449. *Salix alpina*
 450. *Salix reticulata* subsp.
 reticulata
 451. *Salix waldsteiniana*
 452. *Salsola soda*
 453. *Salvia nutans*
 454. *Salvia ringens*
 455. *Salvia viridis*
 456. *Sanguisorba albanica*
 457. *Saponaria intermedia*
 458. *Saxifraga androsacea*
 459. *Saxifraga carpatica*
 460. *Saxifraga granulata*
 subsp. *granulata*
 461. *Saxifraga scardica*
 462. *Scabiosa achaeta*
 463. *Schivereckia doerfleri*
 464. *Schoenoplectus mucronatus*
 465. *Schoenoplectus tabernaemontani*
 466. *Schoenoplectus triquetus*
 467. *Scilla autumnalis*
 subsp. *autumnalis*
 468. *Scilla litardierei*
 469. *Scopolia carniolica*
 470. *Sedum sartorianum*
 471. *Sedum stefco*
 472. *Sedum tubiferum*
 473. *Sempervivum kindingeri*
 474. *Sempervivum macedonicum*
 475. *Seseli gracile*
 476. *Seseli hippomarathrum*
 477. *Sideritis montana*
 subsp. *montana*
 478. *Sideritis scardica*
 479. *Silene echinata*
 480. *Silene fabrioides*
 481. *Silene multiflora*

482. *Silene schmuckeri*
 483. *Silene vallesia* subsp.
 graminea
 484. *Sisymbrium*
 polymorphum
 485. *Sisyrinchium*
 bermudiana
 486. *Soldanella pindicola*
 487. *Solenanthus krasnii*
 488. *Solenanthus scardicus*
 489. *Sparganium natans*
 490. *Spiraea crenata*
 491. *Spiranthes aestivalis*
 492. *Spiranthes spiralis*
 493. *Stachys milanii*
 494. *Stachys serbica*
 495. *Stipa joannis*
 496. *Stipa mayeri*
 497. *Stipa pulcherrima*
 498. *Suaeda pannonica*
 499. *Swertia perennis*
 500. *Symphyandra wanneri*
 501. *Tanacetum larvatum*
 502. *Taxus baccata*
 503. *Teucrium arduini*
 504. *Thalictrum alpinum*
 505. *Tozzia alpina* subsp.
 carpathica
 506. *Tragopogon floccosus*
 507. *Trapa annosa*
 508. *Traunsteinera globosa*
 509. *Tremastelma*
 palaestinum
 510. *Trifolium vesiculosum*
 511. *Trifolium wettsteinii*
 512. *Triglochin maritimum*
513. *Triglochin palustre*
 514. *Tuberaria guttata*
 515. *Tulipa hungarica*
 516. *Tulipa scardica*
 517. *Tulipa serbica*
 518. *Typha minima* subsp.
 minima
 519. *Typha shuttleworthii*
 520. *Umbilicus luteus*
 521. *Urtica kioviensis*
 522. *Utricularia intermedia*
 523. *Utricularia minor*
 524. *Valeriana dioica*
 subsp. *dioica*
 525. *Valerianella muricata*
 526. *Ventenata dubia*
 527. *Veratrum lobelianum*
 528. *Verbascum scardicola*
 529. *Veronica bachoferii*
 530. *Veronica barrelieri*
 531. *Veronica baumgartenii*
 532. *Veronica fruticans*
 533. *Veronica thessalica*
 534. *Vinca herbacea*
 535. *Vincetoxicum*
 fuscatum subsp.
 fuscatum
 536. *Viola dukadijinica*
 537. *Viola persicifolia*
 538. *Viola pumila*
 539. *Viscaria asterias*
 540. *Waldsteinia ternata*
 subsp. *trifolia*
 541. *Wulfenia blecicii*
1. *Bangia artropurpurea*
 2. *Batrachospermum*
 cayennense
 3. *Batrachospermum*
 confusum
 4. *Batrachospermum*
 ectocarpum
 5. *Batrachospermum*
 turfosum
 6. *Batrachospermum*
 virgato-decalsneanum
 7. *Chara braunii*
 8. *Chara canescens*
 9. *Chara globularis*
 10. *Chara hispida*
 11. *Chara tenuispina*
 12. *Chara virgata*
 13. *Hildenbarandia*
 rivularis
 14. *Nitella capillaris*
 15. *Nitella gracilis*
 16. *Nitella monodactyla*
 17. *Nitella mucronata*
 18. *Nitella opaca*
 19. *Nitella syncarpa*
 20. *Nitellopsis obtusa*
 21. *Paralemanea annulata*
 22. *Paralemanea catenata*
 23. *Thorea hispida*
 24. *Tolypella intricata*
 25. *Tolypella prolifera*

Algae

6. Autochthonic races and sorts of domestic animals

Species	Sort	Population No.	Location No.
Horse	Domestic mountain	61	5
	Nonius	71	6
Donkey	Balkan	53	5
Beefs	Busha	290	9
	Podolac	228	3
Buffalo	Domestic	48	5
Porks	Mangulica	402	9
	Moravka	56	4
	Resavka	19	2
Ovines	Pramenka-krivovirska	261	2
	Pramenka-pirotska	?	?
	Pramenka-lipska	204	2
	Pramenka-metohijska barloka	55	2
	Pramenka-karakacanska	43	3
	Pramenka-vlasko vitoroga	250	3
Goats	Cigaja cokanska	400	3
	Balkan 1	210	3
Chickens	Balkan 2	213	2
	Black svrljiska	?	?
	Somborka kaporoka	227	2
	Golosijanka	704	3

7. Protected areas in Serbia

Type of Protected Area	Name of Protected Area	Area in Ha	Date of Establishment	Manager
5 National Parks				
National Park	Fruška gora	25,393.00	1961	PE NP Fruška gora, Sremska Kamenica
National Park	Đerdap	63,608.45	1974	PE NP Đerdap, Donji Milanovac
National Park	Tara	19,175.00	1981	PE NP Tara, Bajina Bašta
National Park	Kopaonik	11,809.91	1981	PE NP Kopaonik, Kopaonik
National Park	Šar planina	39,000.00	1986	PE NP Šar planina, Štrpc
16 Nature Parks				
Nature park	Golija	75,183.00	2001	JP Srbijašume, Novi Beograd
Nature park	Ponjavica	133.63	1995	Društveno vodoprivredno preduzeće "Tamiš - Dunav", Pančevo
Nature park	Begečka jama	379.39	1999	DTD Ribarstvo a.d. Petrovaradin
Nature park	Grmija	1,167.94	1995	JKP Komunalac, Priština
Nature park	Palić	712.90	1996	JP "Palić-Ludaš", Palić
Nature park	Tikvara	508.13	1997	JP Sportsko rekreativni centar Tikvara, Bačka Palanka
Nature park	Sićevačka klisura	7,746.00	2000	JP Srbijašume, Novi Beograd
Nature park	Šargan-Mokra Gora	10,813.73	2005	DOO Park prirode Mokra Gora, Užice
Nature park	Kamaraš	267.96	2005	Udruženje građana za zašt.živ.sred. i poznavanje zavičaja IRINGO, Horgoš
Nature park	Jegrička	1,144.81	2005	JP "Vode Vojvodine", Novi Sad
Nature park	Stara Tisa kod Bisernog ostrva	391.73	2008	Javno preduzeće za komunalne usluge "Komunalac", Bečej
Nature park	Stara planina	114,332.00	2009	JP Srbijašume, Novi Beograd
Nature park	Klisura reke Mileševke	456.60	1976	Šumsko-industrijski kombinat "Zlatar", Prijepolje
Nature park	Kompleks PTK "Panonija"	0.00	1975	DP PTK "Panonija", Duboka
Nature park	PD Zobnatica	30.00	1976	PD Zobnatica, Bačka Topola
Nature park	Park instituta u Sremskoj Kamenici	35.42	1976	Institut za grudne bolesti i tuberkulozu, Sremska Kamenica
16 Landscape of extraordinary characteristics				
Landscape of extraordinary characteristics	Klisura reke Gradac	1,268.60	2001	Ekološko društvo Gradac, Valjevo
Landscape of extraordinary characteristics	Dolina Pčinje	2,606.00	1996	SPC - Pravoslavna eparhija Vranjska, Vranje
Landscape of extraordinary characteristics	Ovčarsko-Kablarska klisura	2,250.00	2000	Turistička organizacija Čačak, Čačak
Landscape of extraordinary characteristics	Miruša	330.47	1998	JP Srbijašume, Novi Beograd
Landscape of extraordinary	Lepterija-Sokograd	405.71	2002	JP Srbijašume, Novi Beograd

characteristics				
Landscape of extraordinary characteristics	Subotička peščara	5,369.90	2003	JP "Palić-Ludaš", Palić
Landscape of extraordinary characteristics	Veliko ratno ostrvo	167.90	2005	JKP Zelenilo Beograd - Sektor održavanja zelenih površina, Beograd
Landscape of extraordinary characteristics	Kosmaj	3,514.50	2005	JP Srbijašume, Novi Beograd
Landscape of extraordinary characteristics	Vlasina	12,740.90	2006	Javno preduzeće Direkcija za građevinsko zemljište opštine Surdulica, Surdulica
Landscape of extraordinary characteristics	Vršačke planine	4,408.00	2005	Javno preduzeće za izgradnju, razvoj i uređenje grada i područja Opštine Vršac "Varoš", Vršac
Landscape of extraordinary characteristics	Avala	489.13	2007	JP Srbijašume, Novi Beograd
Other: Landscapes of special natural beauty		12,105.63		
72 Special Nature Reserves				
Special Nature Reserves	Stari Begej - Carska bara	1,676.00	1994	Ribarsko gazdinstvo Ečka a.d.Zrenjanin
Special Nature Reserves	Obedska bara	9,820.00	1994	JP Vojvodinašume, Petrovaradin
Special Nature Reserves	Jelašnička klisura	115.72	1995	JP Srbijašume, Novi Beograd
Special Nature Reserves	Gornje Podunavlje	19,648.00	2001	JP Vojvodinašume, Petrovaradin
Special Nature Reserves	Pašnjaci velike droplige	979.43	1997	Lovačko društvo Perjanica, Mokrin
Special Nature Reserves	Karađorđevo	2,955.32	1997	Vojna ustanova" Karađorđevo", Karađorđevo
Special Nature Reserves	Klisura reke Trešnjice	595.38	1995	Centar za prirodne resurse NATURA, Valjevo
Special Nature Reserves	Koviljsko- Petrovaradinski rit	4,840.60	1998	JP Vojvodinašume, Petrovaradin
Special Nature Reserves	Slano Kopovo	976.44	2001	JP Vojvodinašume, Petrovaradin
Special Nature Reserves	Deliblatska peščara	34,829.32	2002	JP Vojvodinašume, Petrovaradin
Special Nature Reserves	Venerina padina	0.27	2005	Ugostiteljsko turističko preduzeće Hotel Mir, Zvonačka Banja
Special Nature Reserves	Uvac	7,543.00	2006	JP Vojvodinašume, Petrovaradin
Special Nature Reserves	Ludaško jezero	846.33	2006	JP "Palić-Ludaš", Palić
Special Nature Reserves	Selevenjske pustare	677.03	1997	JP "Palić-Ludaš", Palić
Special Nature Reserves	Zasavica	670.99	1997	Pokret gorana, Sremska Mitrovica
Special Nature Reserves	Kraljevac	264.30	2009	Udruženje sportskih ribolovaca Deliblatsko jezero, Deliblato
Special Nature Reserves	Bagremara	117.58	2007	JP Vojvodinašume, Petrovaradin

General Nature Reserve	Vinatovača	37.43	1995	JP Srbijašume, Novi Beograd
General Nature Reserve	Bukovo	10.42	2007	JP Srbijašume, Novi Beograd
General Nature Reserve	Danilova kosa	6.73	2008	JP Srbijašume, Novi Beograd
General Nature Reserve	Prokop	5.91	2008	JP Srbijašume, Novi Beograd
Other Nature Reserves		2,542.21		
68 Monuments of Nature with Specific Geological Aspects		7,659.00		
244 Monuments of Nature with Specific Botanic Aspects		863.00		
168 Historical Sites		2,489.00		

8. List of planned protected areas in Serbia

National Parks:

- Prokletije
- Sara (expansion)

Nature Parks and Landscapes of Extraordinary Characteristics:

- Zlatibor
- Radan
- Mojsinjske Mountains
- Stalacka Gorge (S. Morava)
- Mali Rzav Gorge
- Ozren-Jadovnik
- Ras-Sopocani
- Kamenka Gora
- Mali Vrsacki Rit
- Kucajske Mountains
- Valjevska Mountains
- Cetije Hydroaccumulation
- Djerdinja Gorge

Reserves and Monuments of Nature:

- Goc
- Beljanska Bara
- Okanj Bara
- Rtanj
- Misevka Gorge (expansion)
- Ozren Meadows (expansion)
- Pastures of Great Bustard (Pasnjadi velike droplje) (expansion)

9. International Conventions and Agreements

	Worldwide agreements	Serbia	
		Year	Status
1949	(GENEVA) Convention on Road Traffic		
1951	International Plant Convention	1955	R
1954	International Convention for the Prevention of Pollution of the Sea by Oil	1973	R
1957	(BRUSSELS) International Convention on Limitation of Liability of Owners of Sea-going Ships		
1958	(GENEVA) Convention on Fishing and Conservation of Living Resources of the High Seas	1966	R
1958	Convention on the Continental Shelf	1966	R
1958	Convention on the Territorial Sea and the Contiguous Zone	1958	R
1958	Convention on the High Seas	1965	R
1960	International Convention for the Safety of Life at Sea	1964	R
1960	(GENEVA) Convention concerning the Protection of Workers against Ionising Radiations		
1963	(VIENNA) Convention on Civil Liability for Nuclear Damage	1977	R
1997	VIENNA) Protocol to Amend the 1963 Vienna Convention on Civil Liability for Nuclear Damage		
1963	(MOSCOW) Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water	1964	R
1969	(BRUSSELS) Convention on Civil Liability for Oil Pollution Damage	1976	R
1976	(LONDON) Protocol		
1969	BRUSSELS) Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties	1976	R
1971	(RAMSAR) Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1977	2001	Su R
1982	(PARIS) Amendment		
1987	(REGINA) Amendments		
1971	(GENEVA) Convention on Protection against Hazards from Benzene (ILO 136)	1975	R
1971	(BRUSSELS) Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage	1978	R
1971	(LONDON, MOSCOW, WASHINGTON) Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil thereof	1973	R
1972	(PARIS) Convention on the Protection of the World Cultural and Natural Heritage	2001 su	R
1972	(LONDON) Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1978 Amendments (incineration) 1980 Amendments (list of substances)	1976	R
1972	Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons, and their Destruction	1973	R
1972	International Convention on the International Regulations	1975	R

	for Preventing Collision at Sea		
1972	(GENEVA) International Convention for Safe Containers		
1973	(WASHINGTON) Convention on International Trade in Endangered Species of Wild Fauna and Flora 1983(GABORONE) Amendment	2002	R
1973	(LONDON) Convention for the Prevention of Pollution from Ships (MARPOL) 1978 (LONDON) Protocol (segregated ballast) 1978 (LONDON) Annex III on Hazardous Substances carried in packaged form 1978 (LONDON) Annex IV on Sewage 1978 (LONDON) Annex V on Garbage	1980 1983	R R
1975	Convention Concerning the Protection of the World Cultural and Natural Heritage	2001 Su	R
1977	(GENEVA) Convention on Protection of Workers against Occupational Hazards from Air Pollution, Noise and Vibration (ILO 148)	1983	R
1979	(BONN) Convention on the Conservation of Migratory Species of Wild Animals 1991 (LONDON) Agreement Conservation of Bats in Europe 1992 (NEW YORK) Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS) 1995 (THE HAGUE) African/Eurasian Migratory Waterbird Agreement (AEWA) 1996 (MONACO) Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS)	2008	
1980	Convention on the Physical Protection of Nuclear Material	1986	R
1981	Convention Concerning Occupational Safety and Health and the Working Environment	1987	R
1982	(MONTEGO BAY) Convention on the Law of the Sea 1994 (NEW YORK) Agreement Related to the Implementation of Part XI of the Convention 1994 (NEW YORK) Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks	2001 Su	R
1985	Convention Concerning Occupational Health Services (VIENNA) Convention for the Protection of the Ozone Layer 1987 (MONTREAL) Protocol on Substances that Deplete the Ozone 1990 (LONDON) Amendment to Protocol 1992 (COPENHAGEN) Amendment to Protocol 1997 (MONTREAL) Amendment to Protocol 1999 (BEIJING) Amendment to Protocol	1990 1992 Su 1992 Su	R R R
1986	Convention Concerning Safety in the Use of Asbestos (VIENNA) Convention on Early Notification of a Nuclear	1989 1989	R R

	Accident (VIENNA) Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency	1991	R
1989	(BASEL) Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal 1995 Ban Amendment 1999 (BASEL) Protocol on Liability and Compensation	2000 2002	R
1990	(LONDON) Convention on Oil Pollution Preparedness, Response and Cooperation		
1992	(RIO) Convention on Biological Diversity 2000 (CARTAGENA) Protocol on Biosafety	2002 2006	R Ac
1992	(NEW YORK) Framework Convention on Climate Change 1997 (KYOTO) Protocol	2001 Su 2008	R
1993	Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction	2000	R
1994	(VIENNA) Convention on Nuclear Safety		
1994	(PARIS) Convention to Combat Desertification	2008	
1997	(VIENNA) Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management		
1997	(VIENNA) Convention on Supplementary Compensation for Nuclear Damage		
1998	(ROTTERDAM) Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade		
2001	(STOCKHOLM) Convention on Persistent Organic Pollutants	2002	Si

Regional and subregional agreements

Serbia

		Year	Status
1980	Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources	1990	R
1982	Protocol Concerning Mediterranean Specially Protected Areas	1985	R
1986	Agreement for the Environmental Protection from Pollution of the Tisza River and Tributaries	1990	R
1991	(ESPOO) Convention on Environmental Impact Assessment in a Transboundary Context 2003 (KIEV) Protocol on Strategic Environmental Assessment	2008 2003	Si
1992 I	(HELSINKI) Convention on the Protection and Use of Transboundary Waters and International Lakes 1999 (LONDON) Protocol on Water and Health		
1992	(HELSINKI) Convention on the Transboundary Effects of Industrial Accidents		
1992	(HELSINKI) Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992		
1992	(PARIS) Convention for the Protection of the Marine Environment of the North-East Atlantic		
1993	(OSLO and LUGANO) Convention - Civil Liability for Damage from Activities Dangerous for the Environment		
1994	(LISBON) Energy Charter Treaty 1994 (LISBON) Protocol on Energy Efficiency and Related Aspects		

1998	2003 (KIEV) Protocol on Pollutant Release and Transfer Register		
1999	Agreement for the Establishment of a General Fisheries Council for the Mediterranean		
2000	(FLORENCE) Convention on European Landscape		

Ac= Accession; Ad=Adherence; De=denounced; Si= Signed; Su: Succession; Ra= Ratified.