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KEY MESSAGES

Biodiversity, especially species selection (i.e. the number of species) and the number of environment types, is higher in the Czech Republic than the European average.

Due to human activities, the number of indigenous types of organisms is declining, while non-indigenous species are being brought to the Czech Republic. Their behaviour is invasive and endangers other species and their habitats, causing economic damage and sometimes even posing danger to human health.

The factors that lead to reduced biodiversity, such as the disintegration, destruction or disappearance of original biotopes and habitats, may soon also be joined by some other new factors like the anticipated climate change.

If the current level of care for biodiversity continues in the Czech Republic, the above trends will remain the same.

The most important legal instrument for biodiversity protection in the Czech Republic is Act No 114/1992 Sb., on the protection of nature and the landscape.



REFERENCES AND OTHER INFORMATION

- Ministry of the Environment – <http://www.mzp.cz>
- Agency for Nature Conservation and Landscape Protection of the Czech Republic – <http://www.nature.cz>
- CENIA, the Czech Environmental Information Agency – <http://www.cenia.cz>
- Czech Society for Ornithology – <http://www.birdlife.cz>, www.cso.cz

Projects

- The opportunities for financing projects that support the environment from the funds of the EC – <http://www.strukturalni-fondy.cz/opzp>
- The overview of financially supported projects for biodiversity protection – http://www.ecmost.cz/ver_cz/nno/nadace/11.htm
- The monitoring of the sites, species and habitat types of Community importance pursuant to EC legislation – <http://www.biomonitoring.cz>
- Projects for specially protected species – <http://www.zachranneprogramy.cz>
- Subsidies for nature conservation and landscape protection – <http://www.dotace.nature.cz>

Additional Information

- The Convention on Biological Diversity – <http://www.cbd.int>
- The information system of the Convention on Biological Diversity in the Czech Republic – <http://www.chm.nature.cz>
- A platform for the research of biodiversity in the Czech Republic – <http://www.ibot.cas.cz/biop/index.htm>
- Information about fauna and flora including systematic classification and pictures – <http://www.biolib.cz>

THE ENVIRONMENT OF THE CZECH REPUBLIC

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Biodiversity



THE ENVIRONMENT OF THE CZECH REPUBLIC

BIOLOGICAL DIVERSITY

The term biodiversity emphasises the diversity and heterogeneity of organisms and their habitats. It thus includes not only the millions species of microorganisms, plants and animals, but also the genes inherent in them. The complicated ecosystems that are formed by organisms together with the non-living environment are also important for biological diversity, as are the symbiotic relationships between them. Biodiversity is most often expressed as species variety in a given place at a given time.

The latest data put the number of species existing within the Czech Republic between 73 000 and 102 000. This does not include viruses, bacteria and single-cell organisms. If we compare this figure with data from other countries whose size, biogeographical conditions and degree of biodiversity are similar to ours, we find that the Czech Republic's biodiversity exceeds the overall European average. The Czech Republic houses every basic central European type of environment and biotope, except for marine, coastal and high altitude mountain biotopes.

WHAT INFLUENCES BIODIVERSITY?

There are a number of factors that have shaped the existing state of the Czech Republic's biodiversity. These include the geographical location of our country, its specific terrain, surprisingly rich geological floor, climatic conditions and last but not least the development that this part of the European continent has undergone and is undergoing. Similarly to elsewhere on Earth, it has been humans who decisively shaped the changes and development trends in the Czech Republic's biodiversity in recent centuries.

Species variety of basic taxa and groups of organisms in the Czech Republic, 2008

Source: Agency for Nature Conservation and Landscape Protection of the Czech Republic

TAXON/GROUP	THE NUMBER OF SPECIES
Cyanobacteria and algae	6 180–15 000
Fungi	30 000
Bryophytes	886
Lichens	1 497
Embryophytes	2 700
Insects	24 800–43 000
Other metazoa – invertebrates	5 800–8 000
Vertebrates	577
TOTAL	73 000–102 000

Even today, we see two parallel processes taking place around us. According to current opinions, the rate at which indigenous species is either becoming extinct or are driven to extinction, especially as a result of human activities, is alarmingly

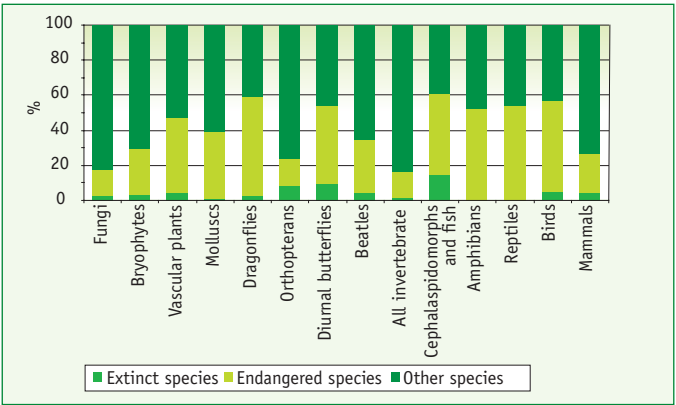
increasing. On the other hand, the process and speed of globalisation are causing a growing number of organisms to be both inadvertently introduced and deliberately planted outside their original areas. These non-indigenous species often exhibit invasive behaviour, endanger other species and their habitats, cause economic damage and sometimes may even pose danger to human health (e.g. the Giant Hogweed, plants of the genus Impatiens, the American Mink).

THE EXTINCTION OF SPECIES

Even though there is, for a number of reasons, a certain inaccuracy to any estimates of the extent of species' extinction, experts agree that the current global extent of species' extinction are at least several hundred times higher than it would be without human intervention. Although some species have managed to quickly and successfully adapt to changes in the environment, it is more common for populations to decline. However, species variety within individual sites and in certain areas may increase. Of the groups for which we have reliable data from within the Czech Republic, the highest proportions of indigenous species that have become extinct since the beginning of the modern period, are cephalaspidomorphs, fish and diurnal butterflies. By contrast, the most species at risk of extinction include dragonflies, amphibians and reptiles. These include, above all, species that are tied to natural ecosystems not much influenced by people (bogs, remnants of steppes, natural forests), species within water biotopes and species that had adapted to intensive farming or to farming methods that are no longer used on a large scale. We suppose that the factors leading to the decline in the Czech Republic's biodiversity, such as the disintegration, destruction or disappearance of the original environment, will in the near future also include the anticipated climate change. Projections of the future development of biodiversity within the Czech Republic are therefore not very optimistic, even if we take into account their inaccuracies.

The proportion of extinct or endangered indigenous species in the Czech Republic [%], 2006

Source: Agency for Nature Conservation and Landscape Protection of the Czech Republic



CARE FOR BIODIVERSITY

Care for the populations of wild plants and animals where they live is referred to as care in situ. It is care for the environment that remains by far the most effective and often also the cheapest method of preserving original biodiversity. In situ biodiversity protection is accomplished, above all, by means of specially protected areas. Outside these areas, biodiversity is preserved through various field measures that support the presence of the target species, their

communities and the environment populated by them. For specially protected species, state nature protection carries out rescue programmes.

By contrast, ex situ protection is based on keeping organisms and their parts alive through deliberate removal from their original environment into human care. This includes growing wild plants and breeding wild animals or keeping them in botanical and zoological gardens, purpose-based breeding and cultures, gene banks and other facilities such as centres for injured or permanently disabled animals.

LEGAL PROTECTION OF BIODIVERSITY

The most important legal instrument for protecting biodiversity in the Czech Republic remains Act No 114/1992 Sb., on nature conservation and landscape protection. The Czech Republic has also assumed commitments under numerous international treaties, particularly the Convention on Biological Diversity (CBD). The key document, the National Biodiversity Strategy of the Czech Republic, was approved by the government of the Czech Republic in May 2005. The document, with its strongly interdepartmental character, describes the current state of the model components of biological diversity in the Czech Republic, defines the main problems and specifies a limited number of objectives for fulfilling the CBD, namely the protection of biological resources, the sustainable use of its components and the fair and just distribution of profits from the use of genetic resources, including current biotechnologies. With respect to the legislation of the European Communities (EC), key significance is attached to the directives on wild birds and habitats, pursuant to which, among other things, a network of protected areas important to the entire European Union (EU), known as Natura 2000, has been established.

BIODIVERSITY INDICATORS

Indicators that are used to provide simplified information about the state of, the changes to, the developmental trends in the model components of biodiversity and about the effectiveness of the CBD's fulfilment are referred to as biodiversity indicators. Biodiversity indicators may include the proportion of naturally forested area in a region's total forested area or the proportion of endangered species within a specific region.

It is obvious that it is virtually impossible to use a single indicator, whatever its complexity, to capture biodiversity. The EU uses the change in the abundance of common wild bird species. It shows that the abundance of common forest bird species in European countries, including the Czech Republic, has remained stable or has increased in line with the expansion of the forested area. On the other hand, the intensification of agriculture is leading to a dramatic decline in the abundance of common farmland species.

Indices of the abundance of wild bird species in the Czech Republic, 1982–2006

Source: Czech Society for Ornithology

