Ministerstvo životního prostředí

National Biodiversity Strategy
of the Czech Republic
2016–2025

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The Strategy was prepared by a team of authors consisting of staff from the ME, the MA, the NCA CR, and other outside experts and consultants, under the supervision of the ME. The Strategy was also discussed and amended by the members of the Committee on Landscape, Water and Biodiversity to the Government Council for Sustainable Development.

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Dictionary of Key Terms compiled by Jan Plesník

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The Bohemian Paradise, photo: Z. Patzelt

Introduction

The National Biodiversity Strategy of the Czech Republic (hereinafter the "Strategy") represents a fundamental conceptual document defining the priorities in the field of conservation, and the sustainable use of biodiversity within the territory of the Czech Republic. It follows up the comprehensive evaluation of the previous document from 2005, on the basis of which, priority areas and objectives were identified. It also takes into account the current international commitments, in particular, the EU Biodiversity Strategy to 2020 and the Strategic Plan of the Convention on Biological Diversity (CBD) to 2020. At the same time, the Strategy follows up on the measures defined by the State Environmental Policy, and it is also linked to other conceptual documents which span across all sectors.

The main role of the updated Strategy is to create a basic conceptual framework based on the existing legislation and the existing instruments, which will contribute to the improvement of the overall situation and sustainable use of biodiversity within the territory of the Czech Republic. Favourable conservation status of biodiversity is a prerequisite for the ecosystem's ability to provide essential goods and services to human society. Therefore, it is necessary to understand that the conservation and sustainable use of biodiversity is one of the key pillars of sustainable development in the Czech Republic. In this respect, the Strategy represents a conceptual document, so that the objectives defined in the area of the protection and conservation of nature and natural resources in the updated Strategic Framework for Sustainable Development in the Czech Republic to 2030, are met. The Strategy reflects the current international objectives, which are closely linked with the objectives of sustainable development, which contributes significantly towards the interoperability of the Strategy Objectives with other conceptual documents at the national level; through the Strategic Framework for Sustainable Development in the Czech Republic.

The main objective of the Strategy is to prevent the continued overall biodiversity loss within the territory of the Czech Republic and at the same time to implement the measures and activities that will lead to the improvement of the status of biodiversity and its sustainable use. In accordance with the main objective of the Strategy, there is a significant effort to increase awareness of the importance of biodiversity and its adequate conservation, and to ensure sustainable future development of the Czech Republic. The overall decline in biodiversity has long been pursued at a European level, confirmed by the mid-term review of the EU Biodiversity Strategy to 2020. All EU Member States, on the basis of those unsatisfactory findings, agreed that it is necessary to make a significantly greater effort by developing a more effective use of existing instruments for the conservation of biodiversity within all key sectors which significantly affect the status of biological diversity. Particularly in Western European countries, the conservation of biological diversity is taken into account to a much larger extent across all sectors and at all levels of decision-making, which in turn contributes to greater knowledge about the long-term economic impact of biodiversity loss. The European Commission has at its disposal a comprehensive analysis of the available economic risks associated with the European biodiversity loss, and it is estimated that the failure to fulfil the main objective of the abovementioned EU Biodiversity Strategy to 2020 causes an annual loss of € 50 billion to the EU economy.

A similar analysis has not yet been made in the Czech Republic; but it is obvious that the findings presented abroad are relevant for the territory of the Czech Republic. Here however, public and political interest in the conservation of biodiversity is lacking; there is little awareness of the risks and economic consequences of biodiversity loss. The presented Strategy should in this respect provide relevant and sufficient information for adequate integration of the

issue of the conservation of biological diversity across all the sectors concerned.

To achieve the abovementioned objective, it will be necessary to ensure that the conservation of biodiversity is recognised as a prerequisite for the sustainable development of the Czech Republic; and in this respect it must be regarded as a matter of public interest.

Structure of the Strategy

The structure of the updated Strategy was the subject of discussions made by the Working Group, which was established by the Ministry of the Environment in order to prepare an update on the National Biodiversity Strategy for the period 2016-2025. The decision about the overall structure of the Strategy is based on the basic analytical data from two studies developed for the Ministry of the Environment in 2014 - "The Analysis of the Implementation of the National Biodiversity Strategy in the Czech Republic 2005-2015 (Global Change Research Institute of the Czech Academy of Sciences (GCRI), 2014)" and „The Analysis of Sources of Proposal of Structures: National Biodiversity Strategy of the CR for the period 2015-2025 (Hošek et al., 2014)". The first analysis is a comprehensive assessment of the previous Strategy (2005-2015), more specifically of its two thematic parts; when the absence of indicators monitoring the component objectives is replaced by a total activities research and the overall development of the state in each of the areas. The second analysis was focused on the relevance of the existing objectives with regard to the current needs and trends in the field of biodiversity conservation at the national level, and also with regard to the current objectives set at the international level. At the same time, the second analysis provided a basic framework for determining the priority areas and objectives.

These documents were discussed and evaluated, as well as the up-to-date information contained in the Fifth National Report of the Czech Republic to the Convention on Biological Diversity (2014), documentation for the Assessment Report on the Status of Species and Natural Habitats in the Czech Republic (NCA CR, 2016), Report on the State of Nature in the EU (2015) and the mid-term review of the EU Biodiversity Strategy to 2020, within the Working Group for the preparation of the Strategy update. Based on all of the relevant information, the Working Group decided, in the view of the complexity and scope of all of the documents that have been evaluated, that the updated Strategy will not contain a specific analytical part which would collectively present the abovementioned information. Instead, it was decided that an analysis of the status quo, which is also based on the abovementioned information, will be incorporated into individual component objectives of the Strategy

Based on the abovementioned analytical foundation, the 4 following priority areas were defined for the updated Strategy:

1. Society Recognising the Value of Natural Resources

This area is mainly focused on the integration of the conservation of biodiversity in the public and private sectors, the increase in awareness of its importance in a global context, the issues of conservation of biodiversity in the context of tourism, and also the provision of adequate financial support.

2. Biodiversity Flourishing in the Long Term and Protection of Natural Processes

This part is aimed at sufficiently ensuring the protection of selected biodiversity components at all levels (even in the form of its sustainable use), and also at supporting natural processes in open landscape and settlements.

3. Environmentally Friendly Use of Natural Resources

Here the Strategy focuses in particular on the improvement of practices in the area of economic management and the

use of biodiversity components and natural resources in selected ecosystems.

4. Providing Up-to-date and Relevant Information

In the last area, the Strategy is focused on securing the relevant information in the field of knowledge, monitoring and research of biodiversity, the establishment of the procedure for national assessment of ecosystem services and the definition of priorities in the involvement of the Czech Republic in international biodiversity conservation.

In those 4 priority areas, there is a total of 20 objectives which describe the general context and relevance of the minor issues of biodiversity protection. It is followed by a description of the current state which always ends with a table of the most important pressures on biodiversity in the region and current threats which may have a significant impact in the area in the future. The text part of each objective is followed by a table of component sub-objectives and each of them defines measures and activities that should be implemented in the following period. For the purpose of monitoring the implementation of component objectives, an indicator, deadline, verification source and responsible authority for each measure was determined. This should facilitate significantly the continuous overall Strategy assessment, which will make it possible to determine, for each component objective, whether or not and to what extent it is implemented and then set the performance of the whole Strategy accordingly.

The Strategy therefore provides a set of priority objectives and measures, which create a conceptual framework for specific activities in the field of biodiversity conservation in the territory of the Czech Republic during the period 2016-2025.

The specific objectives are followed by a summary of identified sources of funding for each of the objectives and comparison of the Strategy with other selected conceptual and strategic documents across sectors which deal predominantly with the issue of biodiversity conservation. The list of abbreviations used in the text is followed by a dictionary of key terms, in which the key terms from the field of biodiversity conservation are defined and explained. The annex to the Strategy then provides a list of so-called Aichi Targets of the Strategic Plan to 2020 of the Convention on Biological Diversity (CBD), which are referred to in the text of the Strategy refers.

The Strategy does not contain a partial Action Plan which would elaborate on the proposed measures in detail, and set more specific tasks. This role, in particular in the context of the Priority Areas 2 and 3 of the Strategy, will be fulfilled by the State Nature Conservation and Landscape Protection Programme of the Czech Republic (SNCLPP), which will be updated by the end of 2017.

Following the adoption of the Strategy by the Government, the Ministry of the Environment will notify other departments concerned with a request to determine a focal point, through which the Ministry will further communicate with regard to the implementation of the Strategy sub-objectives and their subsequent assessment.

Strategy Financing

The Ministry of the Environment is responsible for the majority of the proposed measures and will identify the possibilities to increase the financial resources allocated for their implementation after the Strategy adoption. It is possible to use the resources from the European Structural and Investment Funds (ESIF), where the conservation of biodiversity is consistent across most programmes (Operational Programme Environment for 2014-2020, the Rural Development Programme for the period 2014-2020, Operational Programme Fisheries for the period 2014-2020, Operational Programme Enterprise and Innovation

for Competitiveness, Integrated Regional Operational Programme, the Operational Programme Transport, etc.), until 2020. Together with the use of funds from the ESIF, it will be necessary, considering the need for continuity in the financing of nature conservation after the end of the programming period, to „prioritise" the conservation of biological diversity even at the level of specific departments, including the question of financial resources. In order to include the issue of the conservation of biodiversity to a larger extent within other sectors, specific departments were assigned as responsible for the component objectives, which in cooperation with the Ministry of the Environment should ensure that under the current options of the state budget of the Czech Republic, the necessary financial resources are available for their implementation. The proposed measures may be partially implemented within the already existing measures and instruments or within their extension (especially in the Priority Areas 2 and 3). The main responsibility for the implementation of the Strategy and its component objectives lies with the Ministry of the Environment. However, it is essential that both the adequate consideration and inclusion of proposed measures within the framework of other sectors, and the identification of financial resources for their implementation, involve also the support of the Government and all relevant departments.

Strategy Evaluation

The Strategy contains a total of 20 framework objectives within 4 priority areas, which in addition to the assessment part of the current state and description of pressures and threats, also define the component objectives and specific measures for their implementation. The Strategy contains a total of 68 component objectives and 123 follow-up measures. Each measure was assigned its own indicator which will make it possible to assess the implementation of the measure. Verification sources of individual measures are assigned to all indicators, including the deadline and responsible authority.

The assessment of the Strategy will take place in two stages:

1. The mid-term review of the implementation of the component objectives of the Strategy in the middle of the period (the end of the year 2020).

2. Overall evaluation of the Strategy in 2025.

Both assessments will be carried out by the Ministry of the Environment, as the main responsible Strategy authority, in cooperation with the Ministry of Agriculture. The evaluation system will be based on the collection of relevant data (defined verification sources), which will represent the basis for quantitative determination, in relation to the set indicator, on whether or not the specific measure has been implemented, has been partially implemented, or has not been implemented at all. On the basis of the evaluation of the implementation of the individual measures, it will be then possible to, once again, express the degree of implementation of individual objectives, framework objectives, and the overall Strategy.

In the mid-term evaluation, the attention will be focused primarily on those measures with a deadline of the year 2020; general evaluation of activities that have been implemented in that area will take place in case of other measures. A review of component objectives is not expected on the basis of the mid-term evaluation. The emphasis is put, in particular, on the identification of problem areas, where the expected changes were not achieved within the set deadline. In this respect, it may be possible to make a minor modification or add specific measures.

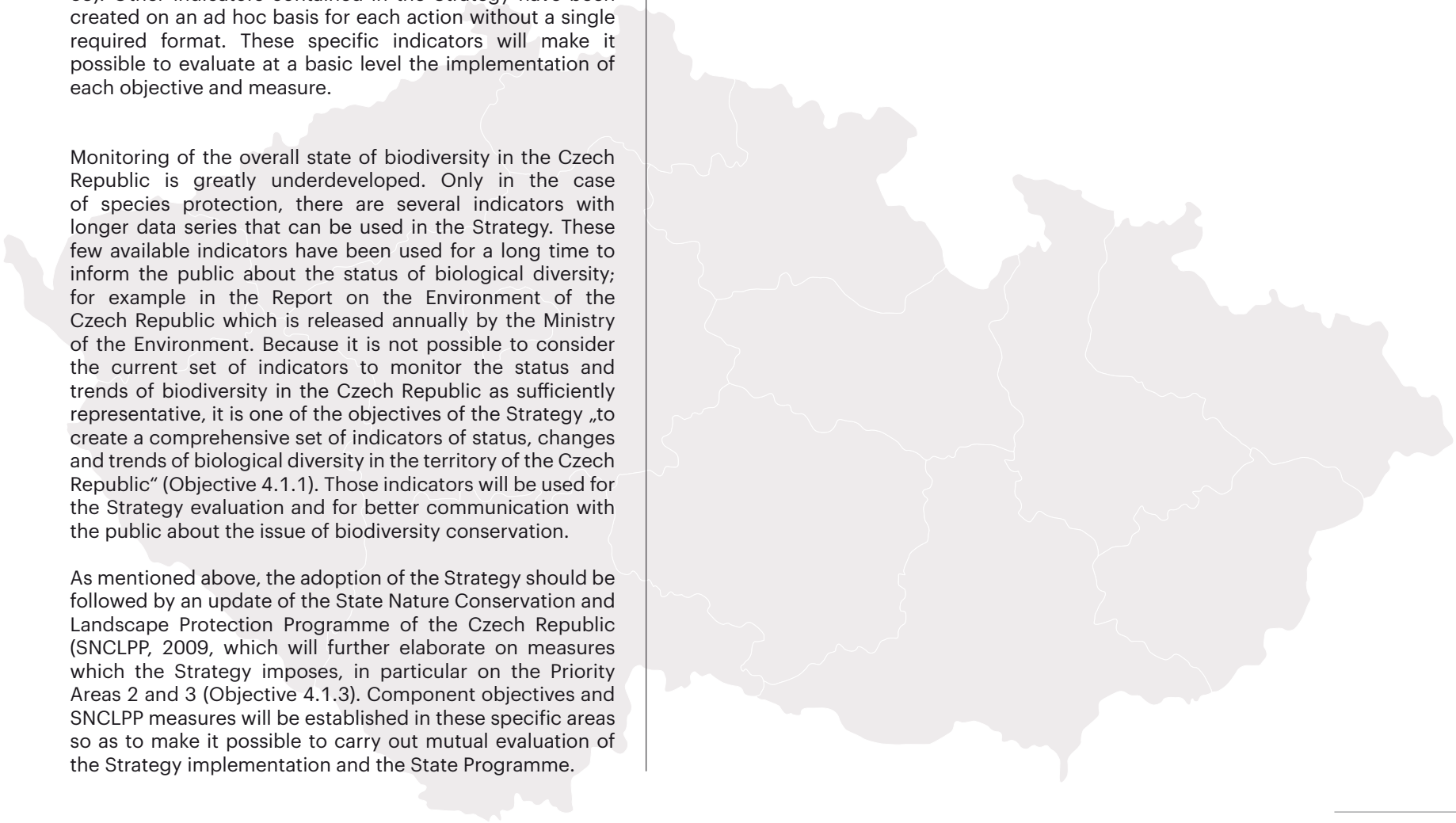
The proposed set of indicators (123 in total) was chosen for the evaluation of the implementation of individual measures and objectives. Where possible, the indicators from the Set of National Indicators (SNI), which is in effect from August 1, 2014 (total individual numbers linked to the 49 indicators,

which are listed in the SNI) were assigned to these indicators. These indicators are listed under individual measures as additional, mainly due to the fact that they are associated only with the financial resources provided from the ESIF, while the implementation of the proposed measures should be in most cases from multiple sources (see Sources of Financing of the Strategy Objectives referred to on page 83). Other indicators contained in the Strategy have been created on an ad hoc basis for each action without a single required format. These specific indicators will make it possible to evaluate at a basic level the implementation of each objective and measure.

Monitoring of the overall state of biodiversity in the Czech Republic is greatly underdeveloped. Only in the case of species protection, there are several indicators with longer data series that can be used in the Strategy. These few available indicators have been used for a long time to inform the public about the status of biological diversity; for example in the Report on the Environment of the Czech Republic which is released annually by the Ministry of the Environment. Because it is not possible to consider the current set of indicators to monitor the status and trends of biodiversity in the Czech Republic as sufficiently representative, it is one of the objectives of the Strategy „to create a comprehensive set of indicators of status, changes and trends of biological diversity in the territory of the Czech Republic“ (Objective 4.1.1). Those indicators will be used for the Strategy evaluation and for better communication with the public about the issue of biodiversity conservation.

As mentioned above, the adoption of the Strategy should be followed by an update of the State Nature Conservation and Landscape Protection Programme of the Czech Republic (SNCLPP, 2009, which will further elaborate on measures which the Strategy imposes, in particular on the Priority Areas 2 and 3 (Objective 4.1.3). Component objectives and SNCLPP measures will be established in these specific areas so as to make it possible to carry out mutual evaluation of the Strategy implementation and the State Programme.

The Strategy has been prepared by a team of authors, under the guidance of the Ministry of the Environment, comprised of staff from the ME, the MA, the NCA CR, and other outside experts and consultants. The Strategy was also discussed and amended by members of the Committee for Landscape, Water and Biodiversity of the Government Council for Sustainable Development.



Summary

- The main objective of the Strategy is, in accordance with the Convention on Biological Diversity in the territory of the Czech Republic, to maintain, and in some selected cases to improve, the state of biodiversity through the proposed measures.

- The proposed objectives of the Strategy are based on the current state of biodiversity, its present trends, and on the modern approach to its protection. It is necessary to cooperate on this issue within the framework of the public administration, but above all, to invite the wider public, including those from the private sphere, to engage with it. The division and focus of the chapters correspond to this.

- The number of objectives and measures is relatively low, especially with regard to the previous version of the Strategy. The effort of the team of authors was to focus on the real priorities, which are, in terms of solutions, urgent, and to set goals that are achievable for the duration of the Strategy. More detailed measures will be the subject of the implementation of Action Plans; in particular the updated State Nature Conservation and Landscape Protection Programme.

- The protection of biodiversity in the Czech Republic is still not sufficiently effective. Despite the main objective (not to worsen the current state), the overall state of biodiversity continues to deteriorate and improves only in some cases. Care for biodiversity is a multi-disciplinary activity, with the greatest threats to its success being intensive agricultural management and inappropriate use of natural resources. This trend is similar to those in neighbouring countries.
- Among the main causes of the current state of biodiversity there are two principal factors; the growing intensification of agricultural production, and the development of urban and transport infrastructures. Because of this, irreversible changes to the natural environment occur, for example; disturbance of its balance (as a result of homogenisation and fragmentation of the landscape), contamination by foreign substances, and conversion of originally natural areas to developed or intensively agriculturally cultivated territories. Not only has the loss of biodiversity occurred, but it is also directly related to the deterioration in how well the ecosystems and ecosystem services function. Partial improvement of the selected components of the environment unfortunately fails to reverse the overall trend.

- One of the main priorities for the upcoming period will be the preservation of funding for the conservation of biodiversity, nature, and the landscape after 2020, when the current operational programmes of the EU (which are the main economic instruments involved in the practical implementation of the policies for the conservation of nature and landscapes) end.

- The improvement of the situation is crucial for the successful involvement of all who affect biodiversity through their activities. A prerequisite for the fulfilment of the Strategy and the achievement of its objectives is, therefore, the common responsibility for the fulfilment across all sectors.

PRIORITY 1

Society Recognising the Value of Natural Resources

Prokopské údolí, photo: J. Plesník, NCA CR

OBJECTIVE 1.1

Society Recognising the Value of Natural Resources

Photo: Z. Machová

Development of the society (which harmonises the consistency of economic and social progress, the management of society, with full conservation of the environment, including the conservation of biological diversity) is referred to as sustainable development. Among its main objectives is the transmission of natural and cultural heritage to following generations in the best possible condition. Human activities must, therefore, respect the limits of the capacity of ecosystems and in an appropriate way manage the natural capital.

For the successful adoption of the principles of sustainability (and the effective identification with them), it is absolutely essential to educate society accordingly. Lifelong learning is essential for the success of the Environmental Education, Training and Public Awareness (EEPA) programme. The aim of environmental education in the Czech Republic is to develop competences (knowledge, skills, and attitudes) required for environmentally responsible behaviour, it is behaviour which is paramount for the current and future prosperity of the state of the environment. The aim of the EEPA is to gain support from target groups to conserve biodiversity. Voluntary involvement on the behalf of the general public is crucial. This is based on the awareness of the importance of the environment for humans; supported by the long-term education of children, teenagers and adults (both within the family home and within educational institutions), providing information, and targeted media campaigns. Similarly important is environmental consulting that provides professional advice and recommendations to the public, presents the results of science and research for the benefit of the environment, brings environmental friendly standards closer to the requirements of the public and educates the public in terms of sustainable development.

The Strategic Framework for Sustainable Development of the Czech Republic from 2010 (updated until the end of 2016 under the name "Czech Republic 2030") is the supreme conceptual document of the Czech Republic, which summarises the key issues in this area. In addition to the economic and social dimensions, it puts the environment on an equal footing across the full range of areas. Education for sustainable development is then, at the Government level, enshrined in the document of the Strategy for Sustainable Development Education in the Czech Republic (2008-2015). For the EEPA and environmental consulting, it is a key document of the State Program of Environmental Education and Public Awareness in the Czech Republic in effect since 2000 and updated in 2016. Important documents are also the State Nature Conservation and Landscape Protection Programme (managed by the ME), and the regional

conceptions of nature conservation, which are regularly processed and updated by the regional authorities.

The Czech Republic has committed itself, within the international community, to strengthen the social environment for sustainable development. By adoption of the Strategic Framework for Sustainable Development, the Czech Republic supports the conclusions of the UN Conference on Environment and Development in 1992 and the Rio+20 Conference in 2012 in Rio de Janeiro, Brazil. It's most important result is the formal approval of the plan to adopt the global objectives of sustainable development, which are linked to the Millennium Development Goals of the UN Millennium Declaration of 2000, and which have been approved by the United Nations in September 2015. The aim of society recognising the value of natural resources is associated, in particular, with the Aichi Strategic Goals 1, 2 and 17. The EU Biodiversity Strategy to 2020 touches upon the topic in Objective 1 (Action 3).

CURRENT CONDITIONS

The Ministry of the Environment, in accordance with section 13 of the Act No. 123/1998 Coll. as amended by later regulations, handles the State Program of Environmental Education and Public Awareness in the Czech Republic; it guarantees, coordinates and updates the State Program through the Action Plans for relevant years and supports the development of education, leading to the preventive conservation of the environment. The Ministry of Education, Youth and Sports is responsible for the inclusion of environmental education (in the sense of sustainable development) into the basic pedagogical documents, and supports the advanced training of teaching staff in the area of environmental protection and sustainable development. ME (in cooperation with MEYS and other central administrative authorities, regions and autonomous municipalities), is required to promote environmental education and awareness based on the principles of sustainable development provided by both state and non-governmental organisations. Regional authorities, who create their own EEPA concepts, play an important role at the regional level.

The EEPA's success is dependable on the joint efforts of State institutions, long-time professional workplaces, organisations, and non-governmental non-profit organisations (NGOs). Support for environmental education and counselling is provided mainly in the form of legislative standards, differentiated financial resources, the development of methodologies and topics, informing and educating the public and target groups of the population and communicating with them via functional networks of educational institutions. MEYS is significantly involved in this aspect at both a conceptual and practical level. The specialisation of the EEPA is to inform visitors and the local population directly in areas of conservation with the use of visitor infrastructure through its administrators (mainly NCA CR), the administrations of NP, and the Cave Administration of the Czech Republic. For this purpose, nature houses have been gradually formed in the protected areas, which apply proven methods of education when in contact with the public, such as the interpretation of the natural heritage.

There is currently a developed system of education about the environment in the Czech Republic which is based on all relevant components existing in other countries:

- Legislative basis and documents from laws to the subordinate legislation and documents of departments and regional authorities, including anchoring in the school system for EEPA
- Institutional and personnel capacity, including specialised workplaces and visitor infrastructure.
- Established funding from public sources.
- Well-developed range of objectives, topics, methods, forms, and educational programmes.

PRESSURES/THREATS

PRESSURES	EVALUATION
One-time funding and a big dependency on foreign sources	Grant-based EEPA leads to a low level of stability and sustainability of the EEPA system. Biodiversity education is therefore not ensured in the necessary continuity. The newly created SEF grant program - State Environmental Program - is an opportunity.
The tendency of only formally including EEPA in some EEPA institutions and a shift to the principles of sustainable development in general, means that often there is not the expected impact on the organisations that could also help the conservation of biodiversity.	EVVO a posun k principům udržitelného rozvoje obecně jsou v některých případech jen proklamovány a nemají v organizacích očekávaný dopad, který by mohl napomoci i ochraně biodiverzity.
Raising barriers for learning outside of school	The facilities allowing direct contact with the natural environment, where pupils can personally observe biodiversity (see decreasing of number of school gardens and the loss of the semi-natural areas in large cities), are worsening.

THREATS	EVALUATION
Support only for selected areas of awareness	Less support for informal education and the dissemination of information on biodiversity and its importance and threats, is a possible danger.
Dependence on funding from temporary resources	It is not clear how the EEPA and other awareness and responsibility raising instruments will be financed after the reduction of resources from European Structural Funds.

COMPONENT OBJECTIVES AND MEASURES

Comprehensively addresses the EEPA and environmental consulting State Program EEPA CR, which is dedicated to school and extracurricular education and training, formal and informal adult education, etc. The updated State Program elaborates on the specific topic of children and adults in direct contact with nature. Therefore a set of EEPA system measures in the State EEPA Program and in the National Biodiversity Strategy of the Czech Republic specifically contribute to the formation of education and materials focused on biodiversity.

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
1.1.1 Support EEPA	Support of education and training in diversity, and possibilities for learning in nature within the framework of pre-school education	Materiály předané do všech MŠ	2022	Potvrzení o převzetí vč. zpětné vazby učitelů	MŽP ve spolupráci s MŠMT
	Preparation of (interactive) materials on biodiversity, and the possibility of teaching 'in nature' for elementary schools	Materials delivered to all kindergartens	2020	Potvrzení o převzetí vč. zpětné vazby učitelů	MŽP ve spolupráci s MŠMT
	Preparation of materials for the extension of knowledge on biodiversity and the possibility of teaching 'in nature' for elementary schools	Materials delivered to all elementary schools	2022	Potvrzení o převzetí vč. zpětné vazby učitelů	MŽP ve spolupráci s MŠMT
1.1.2 Develop Environmental Consulting	Preparation of educational materials about the importance of biological diversity for the network of civil consulting centres	Materials delivered to all high schools	2020	Potvrzení o převzetí vč. zpětné vazby poradců	MŽP
	Preparation of educational materials about the importance of biodiversity for advisors collaborating with enterprises and farmers	Materials distributed to the network of civic consulting centres.	2022	Potvrzení o převzetí vč. zpětné vazby poradců	MŽP ve spolupráci s MZe
1.1.3. Create Campaigns for the Public	Public awareness of the importance of biodiversity at both global and national levels, targeted campaigns on the importance of individual ecosystems	Materials distributed to environmental advisors	2025	Evidence o realizaci kampaní vč. EVALUATION efektu	MŽP

OBJECTIVE 1.2

Public Administration

Management of pools for amphibians, photo: R. Studený, AOPK ČR

Public administration is an activity related to the provision of public services, which serve to fulfil public (State and municipal) interest. In other words, State and local governments achieve their objectives, and at the same time they provide services through the public administration. This also applies to the conservation of biodiversity. In the Czech Republic the public administration contains two subsystems - State and local governments. Concerning local governments, not only territorial, but also interested parties need to be included (e.g. professional associations).

The central administrative body for the protection of nature and landscape is the Ministry of the Environment. Performance of the State administration in the area of nature and landscape protection is provided by the Government and by the municipal authorities at all levels and also by regional authorities. Currently, the regional authorities and municipalities with extended competency (municipalities of 3rd category) have a significant impact on the conservation of biodiversity across most of the territory of the Czech Republic. An important position in terms of the conservation of biodiversity is the so-called "Special State Administration" (especially the NCA CR and NP Administrations) which is there to ensure the conservation and care of sites of national importance. In the military domain, the State administration is provided by the Ministry of Defence and the respective military domain authorities. The State and use of biodiversity also fundamentally affects the performance of other central authorities in the State administration (especially MRD, MA, MH, MC, MIT, MD, MT), and national authorities in their respective areas of competence. The specialised national supervisory authority of State administration in the field of the environment, including the conservation of biodiversity, is the CEI.

Public administration is primarily governed by the legislation of the Czech Republic. Its entities are established through legal standards, and their competences and responsibilities are defined. Part of the law is also formed by ratified international treaties, conventions and protocols, which are from a hierarchical point of view superordinate to laws.

Judicial control of the performance of public administration in the area of nature and landscape conservation is applied by the means of administrative justice. It is ensured by regional courts. There is only one possibility of making an appeal against decisions of regional courts in administrative proceedings, and that is to the Supreme Administrative Court.

At the international level, this objective is associated, in particular, with the Aichi Targets 3, 4, 6, 7, 8 and 13. The

EU Biodiversity Strategy to 2020 touches upon the topic in Objective 1 (Action 3) and also in Objective 3.

CURRENT CONDITIONS

The supreme State inspection authority, which deals with the operation and coordination in matters of nature and landscape conservation, is under the responsibility of the Ministry of the Environment. In addition to ME, however, other central authorities fundamentally affect the conservation of biodiversity as well; MA affects water and forest management, agriculture, hunting, and fishing outside the National Parks, MRD the area of spatial planning, MH the area of public health, MD the military domain, the Czech Mining Office the area of mining administration, etc. The fragmentation of the Strategic Objectives of individual government departments and local authorities is a significant problem for the effective conservation of biodiversity. Although the right to a 'quality environment' is ensured in the Constitution and further elaborated in Regulations, the conservation of biodiversity is not regarded as a priority. On the contrary, the priorities of government departments concerning issues which have a direct economic impact on society are regarded as more important. Their development objectives, however, are often in conflict with the conservation of biodiversity. Unfortunately, these contradictions (as the consequence of so-called 'departmentalism') are not effectively addressed and policies of the departments remain in contradiction. The fragmentation of competences and the frequent fragmentation of the priorities of the central authorities (in particular in the field of spatial planning, water conservation, forestry, and when setting up subsidy programmes) are fully reflected in the lower structures of State administration. Specific regime exists in the military domain, where MD and military authorities ensure the performance of State administration, and ME exercises the State administration on land intended for the defence of the State. Outside the protected areas of national importance, military domains and territories important for the defence of the State (constituting most of the territory of the Czech Republic), it is the authorities of the municipalities of all categories and regions as well as territorial self-governing units, who ensure the performance of the state administration in the area of nature and landscape conservation.

The establishment of the State administration with special competences in the conservation of nature and landscape and ensuring the performance of State administration in nationally important and specially protected areas (NNR, NNP, NP, and SPA) is important in the area of the conservation of biodiversity. There are four national parks with their own administration and protected landscape areas (in addition to the protected Šumava area, where the State administration is executed by the NP Šumava Administration), in which the NCA CR is the nature conservation authority (except for in the military domain or concerning land intended for the defence of the State). NCA CR executes the State administration for the conservation of nature and landscape in the territory of national natural reserves, national natural monuments and for the protection of specially protected areas(except for the military domain or land intended for the defence of the State, or on the territory of national parks and their buffer zones).

Municipalities and regions assist the performance of the State administration based on the Act on Nature and Landscape Protection. The execution of the aims of the State administration in the concerned regions is ensured by the ME; and in municipalities by the individual regional authorities; while its motivation is the implementation of State administration at the first instance level. A special supervisory authority in the field of the environment, (therefore also during the exercise of State administration in the field of the conservation of nature and the landscape), is the CEI. As is evident from the abovementioned facts, the organisation of inspection and supervisory activities should be clarified, in particular, through the means of a more efficient provision of methodological and technical documents, otherwise it will not be sufficiently effective when unifying the State administration, and it will continue to be impossible to ensure its sufficient predictability.

PRESSURES/THREATS

PRESSURES	EVALUATION
The lack of support for the conservation of biodiversity as an essential public interest	The conservation of biodiversity is largely perceived as a non-priority agenda without direct benefits, in the worst case, as a „brake“ for economic development. Therefore, it is within the portfolio of the activities of public administration, mostly overshadowed and other agenda is preferred.
Reduction of the capacity of public administration	Reduction of the capacity of public administration in the field of nature conservation has been already a long-term process. Agenda relating to the conservation of biodiversity is in this case affected more often than other agenda, and that is regardless of the obligations arising from the legislation.

THREATS	EVALUATION
Disrespect of the Strategic Objectives and the legal limits	Already at the level of strategy and concepts of the individual departments, the Strategic Objectives of the conservation of biodiversity are not respected in most cases. It is not possible to take them into account during the implementation of activities based on such strategies and concepts.
Possible weakening of special statutory provisions	In certain cases, when there may be a conflict of interest of nature conservation with other interests, it is possible to identify special efforts to weaken the legislation for the conservation of nature and the landscape with the intention of removing the obstacles that the legislation exposes to this aim.
Political decisions in specific cases in conflict with the factual arguments and legal limits	It is no exception, that the decisions of public administration are affected by political will, regardless of possible serious consequences for the environment, which mostly stems from the generally low awareness of the importance of the conservation of biodiversity and the economic losses caused by its unsustainable use.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
1.2.1 Harmonise the Legal Provisions and Strategic Objectives with Other Departments	The identification of legal provisions that are in conflict with the biodiversity protection and the examination of the possibility of their amendment	The final revision and number of identified and proposed amendments	2019	Amendment proposals / revision of legislation	ME in cooperation with MT, MRD, MA
	Examination of the possibilities of harmonisation of selected strategic documents with the indicated incongruity	Harmonisation of selected documents (number with regard to the previous measure)	2020	Relevant concepts and plans	ME in cooperation with MT, MRD, MA
1.2.2 Ensure Quality Methodological Support	Implementation of a unified public administration support system including particular regional authorities and municipalities with extended competency	Established functional system	2020	Unified public administration support system	ME
	Thematic work meetings of employees of the public administration concerning the conservation of biodiversity	System (concept) of regular meetings	2018	Established system, records of the implementation of meetings including the feedback of the participants	ME
1.2.3 Establish Specific Training Programmes for Students and Public Administration Staff	Introduction of a system of lifelong professional education of public administration workers in the field of the conservation of biological diversity, taking care of it and the sustainable use of its components and long-term support of the system	Established system with the support of the regional authorities and central institutions in accordance with the Act on Civil Service	2020	Support of the system from regional authorities and central institutions	ME

OBJECTIVE 1.3

Private Sector

Kozmické ptačí louky, photo: Z. Kučerová

The private sphere represents all types of business without the majority representation of the State. It includes both multinational corporations, domestic bodies, including small tradesmen. Also private businesses in the Czech Republic in terms of volume significantly predominate over business activities of the State and local authorities and it has greater impact on the State of biodiversity. An important argument for the importance of the role of the private sector is that it substantially uses natural resources to create profit. In other words, it is dependent on the availability and the State of natural resources with regard to the business plan.

Czech or international legislation, in principle, do not distinguish between the rights and obligations of the private and public sphere. Anyone, who intends to implement a specific project with potential impacts on the environment, is bound by the same obligations and conditions, and the institute of public interest can be used in legitimate cases, i.e. possibilities of the implementation for the purpose of social benefit, while accepting certain negative impacts on some of the components of the environment.

In practice, the application of voluntary instruments in the field of biodiversity conservation in the practice of business entities is supported not only by the State Environmental Policy, but also through the means of individual national programmes approved in the Czech Republic at the governmental level and implemented by the Ministry of the Environment. Increasingly, it also develops the concept of the so-called corporate social responsibility.

The objective is associated, in particular, with the Strategic Objectives 3, 4, 6, 7, 8, 13 and 16. The EU Biodiversity Strategy to 2020 touches upon the topic in Objective 1 (Action 3) and also in Objective 3, 4 and 6.

CURRENT CONDITIONS

The continuity of private businesses in the Czech Republic was interrupted in the second half of the last century by the Communist Regime, which had essentially prohibited it. In the 1990's, there was a recovery of private businesses and their subsequent development. One of the causes of political, economic and social change in 1989 also significantly impaired quality of the environment, which, however, quickly improved in some aspects with the development of technologies in the industry in the 1990's. That is why certain private entities may have not felt, as opposed to economically developed countries in the 1990's, greater environmental responsibility, than the one that was imposed by the rule of law. The State organised efforts to

improve the State of the environment are focused mainly on the technical elements of the environment, in particular those related to human health, and their clearly measurable parameters.

It simultaneously greatly increased the pressure of private sector on the use of natural resources. On the one hand, there was the newly formed liberal market with lots of opportunities for new forms of entrepreneurship, on the other hand, there were natural resources used for most business activities. The atmosphere of the changed social system that wanted to negate the previous decades of restrictions and formal planning has resulted in another extreme, excessive liberalisation of the market economy and the lack of emphasis on the conservation of natural and cultural heritage in the public interest rather than personal benefit of individual entities. This was reflected in the often insufficiently regulated authorisation of inappropriate land use, regardless of the negative consequences for the species, habitats and natural processes. The authorities of nature conservation often failed to negotiate projects with significantly smaller impacts or only with slight effects, or rejected them completely based on evidence that could not be challenged. An example is the use of land for construction in inappropriate locations, due to which thousands of hectares of high-quality, often at least semi-natural, areas have so far declined every year. This approach has so far greatly contributed to the consumer's approach, which focuses on economic growth and increase in living standards. On the other hand, however, in the case of obviously problematic activities, the State has instruments to regulate them and it is able to take advantage of the power of public opinion with a quality argument. This applies, for example, to possible future mining of shale gas on the territory of the Czech Republic, when geological exploration of possible bearings was not permitted on the basis of a political decision (Resolution of the Government No. 508/2014) due to the probable negative consequences to the environment.

The approach of the private sphere started to change. An important role played the so-called voluntary instruments. Voluntary instruments refer to such business activities or activities of other entities, which seek to reduce their negative impact on the environment, and these entities introduce and implement them on the basis of their free (voluntary) decision and go beyond the requirements of the applicable legislation.

Basic Principles of the Voluntary Instruments are:

- Voluntary Approach - there is no obligation in the legislation to apply the principles;
- Prevention - focuses on the removal of causes of environmental problems rather than their effects (damage removal);
- Systematic Approach - deliberate actions in those areas and activities of organisations that have a negative impact on the environment.

The use of voluntary instruments (or voluntary environmental activities) at the corporate level is therefore of great importance both for the company itself and for the society as a whole. The preventive focus of voluntary instruments leads to recovery of the environment and greatly contributes to the implementation of sustainable production and consumption and sustainable development. There are also other benefits at the corporate level, for example increase of competitiveness, building of a better image or cost savings. In practice, the application of these instruments is supported not only by the State Environmental Policy, but also through the means of individual national programmes approved in the Czech Republic at the governmental level and implemented by the Ministry of the Environment.

Amongst the voluntary instruments belongs in particular:

- "National Environmental Labelling Program", in the framework of which are labelled products with a lower impact on the environment and human health; in addition to the environmental impacts of products some health

aspects are also reviewed (for example, products must not contain known substances identified as hazardous or dangerous to human health, bio-accumulative, etc.). Clear indication through the means of symbols at the same time helps increase the demand for products and thus their supply.

- "EMAS – Eco-Management and Audit Scheme" is one of the environmental management systems, which is based on the inclusion of environmental conservation requirements into the overall strategy of the organisation and its activities.

- "Cleaner Production" - supports more efficient use of input sources and reduces risks for humans and the environment in enterprises; it is not concerned only with environmental issues but also with the economic aspect of production and it is looking for an economical way of reducing the negative impacts of production or services on the environment (the so-called "win-win" solution).

- "Green Public Procurement" is an instrument to guide the decision-making of public institutions (which include one of the largest consumers in Europe, about 16% of GDP) so as to take advantage of their purchasing power to select goods and services which respect the environment; this also serves as an example for other institutions and individuals, and can significantly affect the market of such goods or services.

- "Voluntary Agreements" are characterised as contractual agreements or commitments concluded between a public authority and private entities that go beyond the scope of the obligations arising from the applicable legislation or replace it in case of its absence. Sometimes they become the foundation of new legislation, or they are used to alleviate its economic impact. Indeed, thanks to the negotiations, more efficient, faster and less costly solution of the problem can be found.

In addition, in the last decade, the concept of so-called Corporate Social Responsibility (CSR) was discovered. The aim of this concept is to integrate social and environmental aspects of business into its business strategy. In practice, it is a voluntary significant consideration of social and environmental business impacts in addition to the primary focus on making a profit and of efforts targeted to prevent damage or negative effects on the society and on the environment, including biological diversity. So far there has been in particular developed the social pillar in the Czech Republic. This is determined by the preferred orientation of the companies to customers and their opinions. Consumers are interested in voluntary support of companies in the social sphere, which is so far more visible and comprehensible, rather than in the impact on the environment. There is a prevalent misunderstanding of companies concerning what and why should be actually protected with regard to biodiversity. Cooperation between private entities and non-governmental organisations rather than institutions of public administration represents first successful examples.

The creation of profit will be, of course, always the primary interest and a perfectly legitimate need of private entities. Therefore, the emphasis on the promotion of biodiversity protection from their side should be always harmonised so that similar activities do not cause competitive disadvantages. The result of corporate social responsibility in relation to biodiversity should be their future competitive advantage not only on the market but also with regard to the customers, who should be motivated to give preference to products of socially responsible companies.

PRESSURES/THREATS

PRESSURES	EVALUATION
Unclear State concept of the use of natural resources	The state concept of the use of natural resources (resource policy, energy conception) are frequently updated and in some cases do not respect the interests of the environmental protection.

THREATS	EVALUATION
Effort to weaken legislation	There have been efforts to weaken legal regulations in order to use natural resources, which result from the low awareness of economic losses that are caused by such biodiversity loss and ecosystem degradation, more freely.
Insufficient communication between the private and the public sphere	For the most part the lack of communication between the public administration and private sector entities applying for an authorisation of certain activities leads to misunderstandings and often interruption or complete failure of the negotiations. This condition has not been improving over the long term.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
1.3.1 Support the Cooperation between the Private and the Public Spheres	Establishing communication platforms (even regarding the biodiversity conservation issues) among the relevant departments and representatives of the private sector (commercial and industrial association for biodiversity)	The establishment of the platform, annual meetings from 2020	2020	Website platforms, reports from meetings	ME in cooperation with MT, MRD and MA
	Access to information concerning the benefits that the biodiversity protection brings	The methodology for the private sector / economic analysis of the benefits arising from the biodiversity conservation	2020	Conceptual document / methodology	ME in cooperation with MF and with MIT
1.3.2 Develop Corporate Social Responsibility	Support of voluntary instruments, including certification and eco-labelling	Number of concluded voluntary agreements and number of voluntary instruments used from 2020 onwards (+ additional indicator NČI 21205)	2025	Voluntary agreements, certification	ME in cooperation with MIT, MRD and MA
	Support of activities of the responsible companies	Promotional activities by 2020 (target value: 4 per year)	2020	Media analysis	ME

OBJECTIVE 1.4

Tourism

Jizerka Educational Trail, photo: M. Němec

The Czech Republic is located in the centre of Europe which is itself exposed to a significant impact of increasing tourism (it is one of the fastest growing economic sectors of today). The Czech Republic has, when taking into account the size of its territory and geographical position in the middle of the most altered continent, above-average natural, cultural and scenic potential for its development. At the same time, however, the most attractive natural sites of the Czech Republic are often very vulnerable also within the tourist activities.

The sustainability of tourism deals with the State Concept of Tourism Policy, which puts the emphasis on the support of development of its innovative forms. The Czech Republic is also a signatory country of the Protocol on Sustainable Tourism to the Framework Convention on Protection and Sustainable Development of the Carpathians, which was the basis for the Strategy of sustainable tourism in the Carpathians, which also emphasised the development of the abovementioned biodiversity sensitive and friendly forms of tourism.

Tourism deals with a number of international organisations specialised in nature and landscape protection, for example IUCN, WWF, UNEP or EUROPARC Federation. These organisations consider appropriately regulated tourism beneficial for nature and landscape protection.

CURRENT CONDITIONS

After 1989, there was acceleration and radicalisation of the impacts on the landscape and ecosystems of the Czech Republic due to an increase in the number of foreign visitors to the Czech Republic and tourism in general. The most important problem in terms of direct effects on biodiversity is interference via noise and light pollution, expansion of invasive species into the territory, treading and creation of parallel or new trails and related increased erosion. Regulation of the movement and behaviour of visitors in SPAs and their education gradually improves thanks to the administrators of the territory and certain non-governmental organisations (even international), among others as a result of sensible and sensitive explanation of necessary restrictions. However, there are also secondary impacts of tourism on biodiversity and the environment represented by new constructions as well as operation of accommodations, transport and other infrastructure and its expansion. Key opportunities for improving the sustainability of tourism are in the development of a partnership approach of nature and

landscape protection services to all participants of tourism and to the promotion of the development of the responsibility for the environment for the general public.

In the Czech Republic there is a number of programmes supporting the implementation of projects to increase the sustainability of tourism, in particular in departments of the ME, the MRD, the MC and the MA. There is currently monitoring of attendance in many Czech destinations, especially in the special protection landscape areas and in NP. Within the quantitative data belongs the tracking of the number of visitors, their spatial and time distribution, etc. Monitoring of attendance is accompanied by qualitative monitoring, which is mostly done in the form of questionnaire investigation to discover more details about the visitors (the structure of visitors, their opinions and service preferences and the status of the territory, the economic impact of traffic, etc.). The Czech Republic is, however, unlike many countries with advanced tourism management, significantly lacking systematic and long-term monitoring of the impacts of visitors on various landscape and natural elements. The weak spot is also the coherence between the data obtained from monitoring and their use in the care of the territory. There is missing a uniform methodology and coordination of the monitoring of the impact of various aspects of tourism in the Czech Republic.

Tourism is regulated by statutory limitations (e.g. entry into protected areas) and strategic plans (sustainable) tourism destinations. However, a comprehensive methodological approach for the collection and evaluation of information, on the basis of which it would be possible to determine the parameters of the sustainability of tourism both in SPAs, as well as in otherwise vulnerable territories, taking into account aspects of nature protection, is missing.

The ME, the management of NP and NCA CR provide information to the public at national, regional and local level in many forms, the most effective are according to the visitors the off road information systems. Since 2008 a network of visitor centres has been being built. The NCA CR gradually carries out the programme “House of Nature”, which offers visitors a complete information service and quality facilities.

Another option to promote sustainable tourism is the use of network called geo-parks, which seek to develop environmentally friendly tourism focused on learning about inanimate nature, landscapes and a series of human activities related to the use of natural resources. The area of the existing geo-parks sometimes partially overlap with the SPAs, but they are usually substantially larger and can significantly contribute to an effort to lighten the most visited tourist sites from the perspective of the biodiversity conservation, and dispel the visitors into a larger territory.

PRESSURES/THREATS

PRESSURES	EVALUATION
The construction and operation of the accommodation and other tourism infrastructure at the expense of valuable habitats and species	The occupation of the land and damage of the vegetation cover lead to disturbance of the animals, damage to the habitats of the species, including soils, have impacts on aquatic ecosystems, etc. The habitats of wild species may be significantly changed (migration routes, places of hunting, nesting sites, etc.) through the creation of tourism infrastructure.
Transport and movement of persons in the territory of SPAs, Natura 2000 Network	Soil compaction due to transport and treading in the heavily visited areas and removal of soil cover of the parallel paths and related erosion that may continue even after the end of the impact, have a negative effect on soil and vegetation, including the spread of undesirable species. Visitors also disturb animals that are present at the site (in particular vertebrates) and as a result affect their behaviour.
The increase in consumption of water for industrial purposes, discharges of sludge and waste water	In particular, the water and wetland ecosystems affect the increase in consumption of water for industrial purposes (e.g. irrigation of golf courses, snow) and discharge of sludge and waste water treatment plants from the tourism infrastructure into the streams, rivers, lakes, dams and reservoirs and groundwater.

THREATS	EVALUATION
Exceeding the capacity of the (especially protected) territory as a result of tourism	Very striking is the increase in (domestic and foreign) tourism in the Czech Republic and even faster growth of tourism in protected areas. It is necessary to ensure the sustainability of tourism in SPAs due to their current capabilities.
Simplified economic perceptions of the role of tourism in protected areas	The role of tourism in protected areas is reduced by some actors only to the economic role, the role of the environmental awareness and educational role is overshadowed. This leads to political pressures on the development of undifferentiated tourism in protected areas.
Development of outdoor/off-road activities in SPAs	The Czech Republic is experiencing development of outdoor/off-road activities in protected areas, those are often activities that are not respecting limitations resulting from the basic and detailed conditions of protection specified for the SPAs as well as other protected areas (off road quad bikes, mountain bikes, etc.).

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
1.4.1 Unified Plan / The Concept of Sustainable Tourism	Creation (update) and the approval of the regional strategy of sustainable development of tourism in accordance with the biodiversity protection, in collaboration with the NCA CR and the administrations of NP situated on their territory.	Approved Strategies	2020	The website and information systems, regional offices, the NCA CR and the administrations of NP	MRD in cooperation with ME
1.4.2 Supporting the Certification of Sustainable Nature-Based Tourism (primarily in NPs and PLAs)	Support of the certification and certified operators, training guides	Certified entities (the number of relative to the year 2016)	2020	Database of destinations, Czech Republic Guides Association, system of qualification standards „Nature Guides“	MRD in cooperation with ME
1.4.3 Support NP administration and NCA CR as partners in the field of the sustainability of tourism	Systematic motivation of actors of tourism in SPAs to prefer the environmentally suitable forms of tourism	Strategy ensuring the sustainability of tourism in SPAs as a basis for policy and care plans	2025	NP and NCA CR administration documents, travel agents and agencies	ME in cooperation with the MRD
1.4.4 Develop a System of Monitoring of the Sustainability of Tourism (priority of SPAs)	The creation of a methodology for the monitoring of impact/effects of tourism on SPAs and other natural vulnerable territories as a basis for the creation of strategies and concepts	All NP and NCA CR reports monitoring the influences/ impacts of tourism according to the methodology from 2020 onwards	2020	Developed methodology for the monitoring of influences/impacts of various activities of tourism in SPAs and NPs	ME in cooperation with the MRD
1.4.5 Establish and Maintain Quality Visitor Infrastructure in SPAs	Creation of valuable visitor infrastructure information system including the demonstration and information centres	Visitor infrastructure and information centre (+ additional indicators NČI 45601 45610, NČI 91001, 91002)	2025	Annual NP AND NCA CR administration reports and reports of visitor infrastructure operators	ME

Photo: Depositphotos

OBJECTIVE 1.5

Economic Instruments and Financial Support

Nezabudice Fish Passage, photo: J. Hodač

The purpose of economic instruments in the field of nature and landscape protection is the accumulation and subsequent allocation and redistribution of financial resources. The aim is to influence the behaviour of economic actors and to secure the resources to help protect and enhance the biodiversity status in the Czech Republic. The economic instruments fulfil the compensatory, fiscal, incentive, redistribution and comparative functions. The compensatory function represents e.g. the compensation of additional costs or losses caused by the limitations of the activity or required activity (including the compensation, when the owner or landlord is being compensated for the loss of profit for different measures, taking into account the requirements of the OP). The fiscal function represents the state budget revenues (or SEF), that are used on the subsidies and securing of the nature and landscape protection. The incentive function supports the behaviour of economic entities in favour of the interests of the nature and landscape protection. The redistribution function allows guiding of the flows according to the policy priorities in the field of nature and landscape protection. The comparative function contributes to the balancing of various economic conditions, economic entities, for example landlords in SPAs.

The objective is associated, in particular, with the Aichi Targets 3 and 20. The EU Biodiversity Strategy to 2020 touches the topic in Objective 1, 2, 3 and 5.

CURRENT CONDITIONS

The current nature and landscape protection in the Czech Republic offers a wide range of economic instruments. These include, in particular, compensations, subsidies (aid from public funds) as well as liability insurance. They are completed with the instruments of tax policy and direct management within the state administration.

Among the most important steps in the process of setting up the economic instruments in the Czech Republic include the SEF establishment in 1991 and the adoption of the Act on Nature and Landscape Protection (NCA) in 1992. When creating a system of subsidies, it was important to establish national landscape-forming programmes from SEF extra-budgetary resources, in particular from the Landscape Care Programme in 1996 and a the Programme of River Revitalisation in 1992 (it was replaced by the Programme of Renewal of the Natural Functions of the Landscape in 2009). They have become major financial resources from its funds after the Czech Republic's entry into the EU, i.e. instruments

for the implementation of the Strategy of economic and social cohesion of the EU (mainly Operational Programme Environment), but also through the means of the Common Agricultural Policy (CAP), in particular its second pillar, which is focused on the area of rural development and environmental protection (Rural Development Programme) and also LIFE. They are also used by other possible sources of support, such as EEA and the Norwegian funds. After the end of the planning period 2014-2020, thus operational programmes financed by the EU funds, the landscape-forming programmes financial allocation should be increased from the state budget.

State grant programmes (in particular ME), regional and municipal programmes, programmes of voluntary sector were created and in the recent years the corporate donation has also developed for the involvement of the public and certain target groups in the biodiversity conservation.

There is also an established system of fees for environmental damage, while the recipient is for the most part SEF, partially also self-government. From the point of view of the biodiversity protection the most important fees are those for the discharge of waste water into surface water and groundwater, the payments for removal of agricultural land resources, fees for withdrawal of land intended for the performance of the functions of the forest, for sampling groundwater and air pollution fees. The SEF is also the recipient of most of the fines imposed for damage or destruction of protected areas of nature and landscape protection in the Czech Republic. Its revenues are not a part of the state budget, and it is therefore a major source of off-budget funds for improving the state of the environment.

In addition to the abovementioned fees, there have been established fees for cutting of trees in the Act on Nature and Landscape Protection since 1992, but because of the lack of follow-up legislation this provision has not been usable, although it would be welcomed by both the public authorities, the obliged entities, because there has been already often lack of suitable areas for replacement plantings. Noticeably missing within negatively stimulating economic instruments is the legal setting of fees for damage or destruction of habitats, while the theoretical preparation is generally established. Economic tool, that is not being used in the field of the biodiversity protection in the Czech Republic yet, is an environmental insurance, otherwise functional for other components of the environment since the 1980s.

Specific economic instruments that aim to increase the level of acceptance of nature protection interests and reduce the influence of the economic activity of the entities concerned, represent compensation for losses caused by difficulties with agriculture and forestry management (Article 58 of Act No. 114/1992 Coll.) and compensation for damages caused by specially selected protected animals (Act No. 115/2000 Coll.). Within the compensation for difficulties with agriculture and forestry management there is about 80 million CZK paid out with and increasing trend from the state budget every year. This instruments since its inception (within the Amendment to the Act on the Nature Protection in 2004) is accompanied by a series of application ambiguities – a system of compensations for losses has not been fixed yet and has a number of legislative and methodological shortcomings. On the basis of separate legislation compensations for damage caused by selected kinds of specially protected fauna are provided in the total annual amount of about 30 million CZK (or up to nearly 70 million CZK in the past with the addition of damages caused by great cormorant). Even in this case, even if the deficiencies are less severe, the methodological and other ambiguities limit the total effect of the instrument.

There are also taxation instruments that are partly used in the field of nature protection, specifically Act No. 337/1992 Coll., on Administration of Taxes and Fees, which allows the exemption of land tax in the specially protected territories.

In the case of grant programmes, there is in general the need for assessment of the impact of the supported measures on

biodiversity in relevant cases. In particular, the operational programmes managed by the MA and some other grant programmes coordinated by other than ME government departments, e.g. the Flood Prevention Programmes (MA), the Operational Programme Transport Infrastructure (MD) report increased risk of so-called "environmentally harmful subsidies" with a negative impact on biodiversity. In the case of subsidies directly aimed at promoting measures for biodiversity protection and strengthening administered by the NCA CR there has been set a system of monitoring and assessment. It is appropriate to extend it also to other subsidy programmes, including the programmes managed by the MA.

The system of financial support from the state budget and European funds is supplemented by a number of grants in the framework of the non-governmental sector which are important for the increase of public participation in the biodiversity protection, for example the grant programme of the Partnership Foundation. Corporate donations and joint donor programmes with NGOs financed by commercial entities have been developing as well.

PRESSURES/THREATS

PRESSURES	EVALUATION
Low effectiveness of the use of the ecological compensation instruments.	Charges for the removal from the agricultural land resources are relatively low and the real value of habitats and species is not taken into account in their amount. Financial contributions are not fixed as a compensation instrument for ecological loss according to the NCA. There is construction growth outside of the existing settlements.
Reduction of the volume of financial resources from national programmes	National programmes enable to target the care of specific sites, which supports diverse management and the biodiversity. At the same time it is possible to perform a special care for targeted species. The lack of financial resources has led to the fact that most of the selected volume is focused on the specially protected areas and the allocation of care outside of those areas was significantly limited.
The application of agricultural subsidies, development of intensive technologies in agriculture	Due to the unified application of agricultural subsidies that support the implementation of the unified management, the biodiversity of rare species particularly associated with grass communities is at risk.

THREATS	EVALUATION
End of the Operational Programme Environment 2014+ without adequate compensation	After the end of the current programming period OPE 2014+ there is not an adequate substitute for the area of the nature and landscape care.
Growing administration of grant, especially European programmes	Current demands on administrative preparation and securing of the projects from the European programmes are high. In case of further increasing of the administration they may be a limiting factor.
Reduction of the allocation of financial resources to the nature and landscape protection in favour of politically more interesting topics	Providing care for nature and landscape in protected areas including free landscape care requires sufficient financial resources. If the availability or, rather, the volume of funding for the nature and landscape care drops below the critical limit, the objects of protection may be endangered.

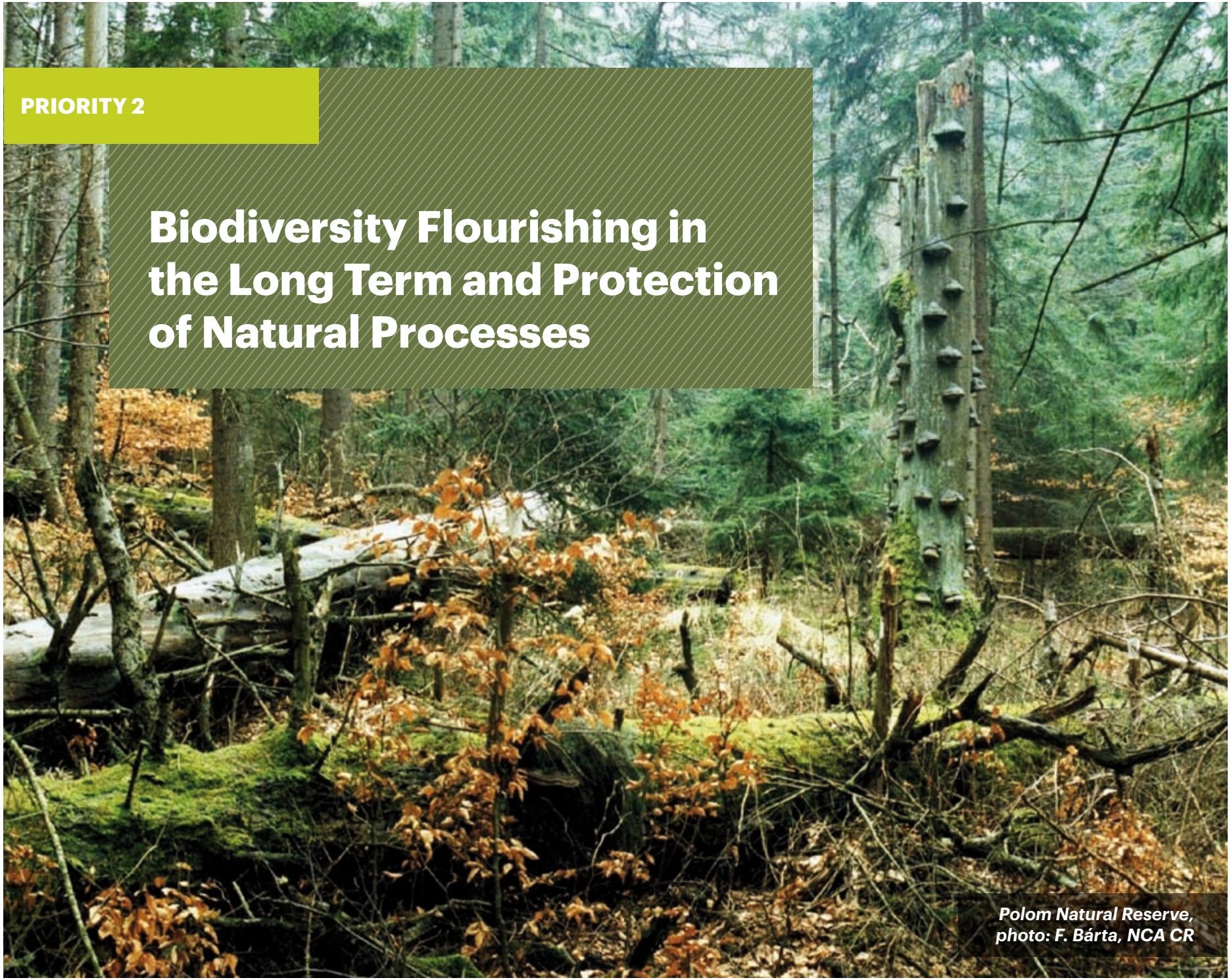
COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
1.5.1 Ensure Sufficient Funding Intended for the Nature and Landscape Care	The creation of an interdepartmental concept of multi-source financing of nature and landscape care	Multi-source financing concept	2017	Concept; information concerning the financial performance of the implemented projects	ME in cooperation with MA, MF and other relevant ministries
	Effective use of existing EU funding instruments (OP ENVIRONMENT, LIFE)	The amount of resources used to support the biodiversity from EU financing instruments (ESIF OPE and more)/positive trend (CZK)	2020	Information about the use of programmes and financing of specific projects	ME
	Extension of the titles of the national subsidy programmes for non-financed nature and landscape care (e.g. the care of specially protected species in the open landscape, the care of Natura 2000 Network locations etc.) after 2020	New titles of national subsidy programmes	2020	Rules for the use of national subsidy titles	ME
	Increase of the financial resources from the state budget to the ME national subsidy programmes for the nature and landscape care as a follow-up after the end of the OPE in 2020	Amount of the resources utilised for biodiversity support from the state budget/positive trend (CZK)	2020	Information about the use of programmes and financing of specific projects	ME in cooperation with MF
	Analysis of the damage compensation system and damages for overburdened management	Legislatively-economic analysis of the damage compensation system and damages for overburdened management in the conditions of the Czech Republic and the context of the neighbouring countries and the possible optimization within the existing or new legislation	2018	Analysis and possible proposal of the optimisation	ME in cooperation with MA and MF

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
1.5.2. Harmonise the Funding Programmes between ME and MA Departments	Significant adjustment of funding programmes, in particular agricultural (ESIF – Rural Development Programme – agro-enviro measures), in order to sufficiently take into account the protection of biodiversity	Modified subsidy titles	2018	Assessment of the impact of the funded measures on selected species and their habitats	MA in cooperation with ME
	Targeted focus of agricultural subsidies on the biodiversity protection - amendment of targeted farm plans	Approved methodology of creation of farm plans, custom farm plans	2020	Registration of developed farm plans under the RDP	MA in cooperation with ME
1.5.3. Get information about the impact of funding policy on biodiversity and assess the effectiveness of the measures financed by public sources	Establishment of a single information platform concerning the nature and landscape care for the planning, administration, implementation, control, monitoring and assessment of measures in the framework of the established monitoring of operational programmes	Information platform	2020	Feedback on the accuracy of proposed measures	ME in cooperation with MA, MRD and MF
1.5.4 Prepare the Overall Financing Biodiversity Conservation Concept	Preparation and approval of the Strategy, the mobilisation of resources (RSM) for the biodiversity protection in accordance with the Aichi Target 20 CBD	Adopted strategic document	2018	Implementation of the proposed measures and steps in the RSM	ME in cooperation with MF

PRIORITY 2

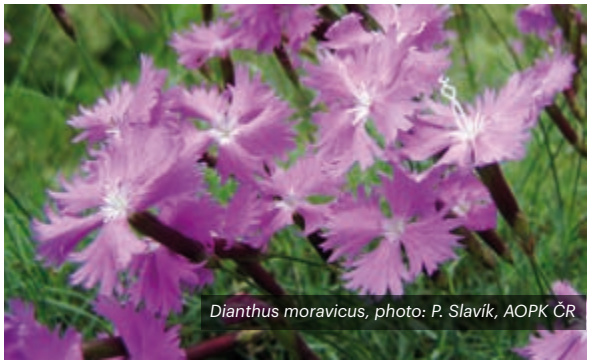
Biodiversity Flourishing in the Long Term and Protection of Natural Processes



Polom Natural Reserve, photo: F. Bárta, NCA CR

OBJECTIVE 2.1

Genetic Diversity



Dianthus moravicus, photo: P. Slavík, AOPK ČR

Genetic diversity remains the least known aspect of biological diversity. Despite the rapid development of its knowledge, relatively less attention has therefore been, and still is given to the protection of genetic diversity. New information clearly shows the vital importance of genetic diversity for the survival of viable populations of many organisms. In addition to its value for the natural stability, the genetic component of biodiversity is of great importance for humans and their economic activity, since it is a natural source of diverse genotypes for possible use in breeding and agricultural production, in biotechnology and in the food, cosmetic and pharmaceutical industries.

At the international level, the issue of genetic diversity protection is addressed primarily within the framework of the CBD. In order to protect the biodiversity and its sustainable use, the Czech Republic, as a Party to the Convention, has committed itself to determine the components of biodiversity that are in this context key or significant, and to monitor them with an emphasis on the current need for protection. This necessarily concerns also genetic diversity, the utilization of which is explicitly referred to in the third main objective of the Convention. The issue of protecting genetic diversity is also addressed to in the CBD Strategic Plan 2011-2020, specifically by the Aichi Target 13. Furthermore, great attention to genetic diversity is paid in the text of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, ratified by the Czech Republic in 2016. In the EU Biodiversity Strategy to 2020, the protection of genetic diversity is addressed in relation to agriculture, specifically by Target 3, Action 10.

Despite the above mentioned facts, the legislation of the Czech Republic almost does not deal with the issue of protecting genetic diversity of wild organisms yet. Regarding wild organisms, this issue is addressed only by the Act No. 114/1992 Coll. on nature and landscape protection. On the other hand, the agriculture deals with the conservation of genetic diversity of organisms for food and agriculture in the Act No. 148/2003 Coll., on plant and microorganism genetic resources, in Act No. 154/2000 Coll., on cultivation, breeding and registration of livestock (the Breeding Act), and in a number of related regulations. In relation to this legislation, the Ministry of Agriculture manages the National Program on Conservation and Utilization of Plant, Animal and Microbial Genetic Resources for Food and Agriculture (see Objective 3.6).

CURRENT CONDITIONS

Territorial protection creates the basic conditions for forming and conservation of the natural genetic diversity of populations and species. In situ protection includes protection of habitats and individual species in their natural habitats. Concerning the genetic diversity protection, it is important to conserve and create the greatest permeability and connectivity of the landscape also outside the SPAs In the case of the low population density of organisms or other threats, the protection may be carried out also with the transfer of individuals between populations (which can be particularly effective for protection against negative effects of fragmentation of biotopes) or their introduction to new sites (repatriation, introduction, the strengthening of the populations). In situ protection can be supplemented by ex situ protection when individuals bred or raised in human care are used to support the original population or for the introduction to the new site (e.g. recovery programme or breeding). Maintaining the diversity outside the original habitats in nature (ex situ) is an important and legitimate method, especially if the organism is on the verge of disappearing in the wild and the ex situ conservation is the last resort, or if the taxon/population is at risk of a substantial decline in genetic diversity and ex situ breeding can prevent its further loss. A clear legal framework relating to the ex situ protection is a set of regulations for Zoos. Out of these the most important are Act No. 161/2003 Coll., on conditions for the operation of zoos and amendments of certain Acts, and the Council Directive 1999/22/EC relating to the keeping of wild animals in zoos. In addition to other important features, it is an explicit statutory mission of zoos to contribute to the conservation of biological diversity of wild fauna through the means of keeping in human care. In the Czech Republic there are currently more than 25 zoos with licenses that are managed by municipalities, regions or private entities.

General protection of genetic diversity through the protection of habitat and species protection, however, is not sufficient, since it does not allow for monitoring of genetic erosion, as it is apparent from the CBD requirements. Specific measures, such as ex situ protection or transfer of individuals, are entirely dependent on high-quality information from the perspective of the gene pool. Therefore, it is essential for the nature conservation to also conceptually monitor the genetic diversity of species that would allow for the creation of targeted measures to prevent the diversity reduction. The rapid development of genetic methods in recent years provides a large amount of data. However, research activities are not in any way systematically supported or coordinated in the Czech Republic at the moment, and they are deriving only from the research focus of each of the scientific teams and their success in obtaining financial support. Therefore, the majority of species significant for protection has not been genetically examined yet and uniformly coordinated biorepositories of genetic samples with long-term guarantee that would enable systematic research of genetic diversity do not even exist. The study of genetic variability and population structure is a part of only a few recovery programmes and care programs.

Unlike most wild species, the question of the conservation and sustainable use of potentially important plants, animals and micro-organisms for forestry and agriculture is relatively well handled in the Czech Republic. The National Program on Conservation and Utilization of Plant, Animal and Microbial Genetic Resources for Food and Agriculture and the National Program on Conservation and Reproduction of Forest Tree Species Gene Pool are managed by the Ministry of Agriculture. Specialised collections, gene banks, gene reserves, seed orchards, specific reproduction material, farmed animals, and in some cases, populations of wildlife are supported under these programmes systematically and on long-term basis.

The case of the conservation of natural biotopes and of wild species bound to them within the competence of ME of the Czech Republic is different from economically important plants and animals. A significant shift in the field of the protection of genetic diversity of wild organisms was reached

by the establishment of the National Animal Genetic Bank in 2015 under the project financed from the funds of the EEA 2009-2014. The founding institutions are the Institute of Vertebrate Biology AS CR, and the Faculty of Science of the Charles University in Prague. The aim of this genetic bank is to acquire, process, store and provide samples of tissues of animals (or DNA) for genetic research and the protection of biodiversity. The Bank operates as a network of institutions that have their own collection of genetic samples and share data about them in a common database, and institutions that are willing to collect and provide samples. The preservation of samples is, however, still only guaranteed by the current ability of specific institutions to support the storage of the samples.

PRESSURES/THREATS

PRESSURES	EVALUATION
Biotope Fragmentation	Intense development of linear structures and other types of migration barriers leads to landscape connectivity decline and large-scale fragmentation of the wildlife species habitats. Consequence is the gene flow reduction, changes in the population-genetic structure as a result of the decline of the efficiency of natural selection and increased risk of inbreeding, with a consequent loss of genetic diversity.
Discharge of animals and the introduction of alien populations of plants	In the context of the introduction and management of animals (e.g. fish and forest animals) the origin of discharged or garden subjects, with subsequent effects on the gene pool of the species is very often not addressed. This change may result in the loss of local adaptation and, where appropriate, in a gradual demise of the original wild species.

THREATS	EVALUATION
Lack of knowledge about genetic diversity and structure of the population	Protecting biodiversity does not include sufficient genetic biodiversity level. There is not any national programme of genetic diversity protection of wild organisms that would coordinate its research and other activities.
Reckless introduction and repatriation	Introduction of geographically alien individuals or populations with an unknown origin bred in captivity may significantly distort the original genetic diversity of populations and possibly affect their viability. During the planning of all repatriations and introductions, it is necessary to identify the most suitable source population on the basis of the study of genetic diversity of the original population.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
2.1.1 Create a National Programme to Protect the Genetic Diversity of Wildlife Organisms	The concept of a national genetic diversity protection of wild organisms in detail identifies the priorities for genetic diversity research and application of its results, the identified research priorities CRDI / TA CR	Concept / National Program	2018/ 2020	The existence of a national program to protect the genetic diversity of wild organisms	ME
2.1.2 Create an Infrastructure for Research and Conservation of Genetic Diversity of Wildlife Organisms	Creation of a National Genetic Biodiversity Bank.	Creation of a National Genetic Biodiversity Bank.	2020	Existence of a National Genetic Biodiversity Bank.	ME
	Linking the databases of genetic banks with other relevant national (e.g. Finding database for nature conservation) and international databases (e.g. GBIF and GGBN)	Involvement of the Czech Republic in GBIF and the involvement of the National Genetic Biodiversity Bank in GGBN	2020	Sharing data about genetic diversity in the Czech Republic on international data portals	ME
2.1.3 Apply Knowledge of Genetic Research to Practical Species Protection	Support communication between researchers and users of research results within the nature protection, taking into account information on genetic variability and structure in conservation measures	Increase in practical conservation work stations, taking into account the results of genetic research	2025	Survival/recovery programme, programs of care, projects including repatriation and introduction	ME

OBJECTIVE 2.2

Species

Common kingfisher, photo: P. Mückstein, AOPK ČR

Types of species (animals, plants, fungi, unicellular organisms and viruses) remain the basic unit for the definition of nature diversity. Species protection is in addition to territorial protection, and protection of essential natural processes industrial pillar of care for natural and landscape heritage. In addition, species protection has relatively higher potential to present appropriately the need for protection of biological diversity to the public.

High or low abundance of populations of individual species and species richness of different ecosystems have a variety of causes. Some of them are few in number as a result of natural processes, so-called environmental factors (naturally rare species such as the specific substrate or climatic conditions) or their abundance influence factors as a result of which the presence and abundance of populations may often change dramatically. The main cause of significant changes in the number of species and the size of their populations in the last decades are, however, in particular processes related directly or indirectly to human activity. It is sometimes very complex to separate natural and anthropogenic factors from each other, in particular, with regard to the overall development of the cultural landscape in Europe.

The Basic Law of the species protection is NCA, including the requirements of EU legislation, namely the Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC). The protection of species or species richness is one of the main objectives of the Convention on Biological Diversity. Across the majority of the Aichi Targets of the CBD Strategic Plan can be found in topic of species diversity. In the national Strategy documents, the protection of species is dealt with mainly in SEP and also in SNCLPP (2009).

CURRENT CONDITIONS

The Czech Republic is due to its location on the interface of four bio-geographical sub-provinces (Hercynian, Polonian, the Western Carpathian and the North Pannonian) and the geological diversity of the relatively species-rich, especially compared with Western Europe. Almost 80,000 species is known on the territory of our country. Some gradually grow (e.g., alien species or deliberately planted or naturally spreading due to the changes in the spreading area), others are disappearing for different reasons, particularly as a direct or indirect result of human activity.

The legal protection currently refers mainly to populations or individual species, the protection of their biotopes is from the legislative and practical perspective limited. This is an important factor contributing to the fact that one third of

the species in the Czech Republic is evaluated in the context of the red list as "vulnerable", while hundreds of species in our country have already disappeared. Types of species demanding better environments, especially tied to the presence of traditional, extensively used mosaic agricultural landscape, predominate between retreating or no longer existing species. Both the trend of decrease in population and the shrinking of the spreading range are unfortunately possible to notice in previously common species. The main cause of the current state is change in the approach of society to care for landscape and its exploitation, which quickly results in loss of natural and semi-natural biotopes and species. Native species are also more increasingly threatened by expansion of dozens of new alien invasive species whose removal or at least control tends to be very challenging (see Objective 2.3). An important aspect, which adversely affects the current state, is also out of date list of specially protected species, which has been valid only with minority changes since 1992 and it does not reflect the current state of knowledge. It includes, in some cases, species that already do not need legal protection, and on the contrary, it does not include species that according to the current knowledge should be included on this list, i.e. they shall be protected through legal instruments.

Species occurring in the Czech Republic are those that depend on human activities (targeted care or economic activities), and those whose existence requires a minimum intervention. Although the first group significantly predominates, for effective protection it is necessary to ensure sufficient mosaic of habitats including the territory intended for the protection of natural processes and at the same time provide adequate landscape permeability and connectivity of each type of the environment in order to avoid isolation and degradation of individual populations.

Very important and successful activities under the species protection are survival/recovery programme and plans of care of selected species that are aimed at the most vulnerable and "umbrella" species (i.e. those whose protection ensures also protection of other phenomena). Their number is, however, limited due to the financial costs. At the same time the species protection is done by the means of special protected areas including the Natura 2000 sites.

One of the prerequisites for effective species protection remains a regular, recurring monitoring carried out through standard methods of the target species and the environment they inhabited. The Monitoring of species diversity in the Czech Republic is quite extensive and includes:

- Monitoring of the state of the species in accordance with the Habitats Directive (since 2005), among others includes monitoring of bats (implemented since 1969), monitoring of large carnivores, floristic records obtained in the habitat mappings, etc.
- Breeding Bird Census Programme in the Czech Republic (since 1983), the mapping of breeding distribution of birds (in approximately 10-year cycles), monitoring of birds in accordance with the EU Birds Directive (from 2004, from 2014 methodically changed and following the mapping of breeding distribution of birds), monitoring of water birds in the Czech Republic (since 1973), international water bird census (since 1967).
- Projects of civic science: BioLog, BioLib.
- Data from phytosociological images: Czech National Phytosociological Database

The current statutory framework for species protection (protected are the populations and individuals of selected species, including their habitats) tends to rather focus on the knowledge of species than on the knowledge of the changes of the quality of their habitats. In this respect, the monitoring focused on the changes in quality of habitats in relation to the needs of the species is nog sufficiently developed either.

PRESSURES/THREATS

PRESSURES	EVALUATION
Homogenisation of Landscapes	Due to the current pressure on the intensification of the landscape exploitation, habitats valuable for species are disappearing, such as differentiated forests, hedgerows and rows of trees, species-rich meadows and pastures or extensively used bodies of water, etc. This causes a decrease or disappearance of significant quantities of wildlife species.
Fragmentation of Species Habitats and Migration Barriers as a Result of the Development of Transport Infrastructure	Landscape fragmentation caused by the development of transport infrastructure, along with its homogenisation the most important factor for species reduction, as the isolation of individual populations occurs. Also the high level of fragmentation of water courses persists in cross buildings and inappropriate longitudinal adjustments. Problematic is the high mortality rate of animals on roads and other infrastructure (including the impacts of birds into glass surfaces), and also disturbance by noise or animal light smog.
Construction Interventions and Technical Modifications of the Landscape	In the framework of the construction activities, reclamation after mining and quarrying and other activities that affect the state of the landscapes, habitats and animal species, the procedures that will minimise the adverse effects (use of semi-natural reclamation methods, etc.) are not sufficiently used. In the framework of the construction activity, large terrain modifications with subsequent homogenisation of the environment occur. The current management of water flows, including maintenance of excessive number of insurmountable migration barriers for fish makes it essentially impossible to maintain the populations of species bound to aquatic environment in a favourable conservation status.
Climate Change	There is an increase in the occurrence of weather extremes spreading in combination with fragmentation of the landscape, the spread of invasive species and some species disappear, fragmented landscape does not allow for natural migration and other factors increase the risks for individual populations and entire species.

THREATS	EVALUATION
Inadequate ownership and subsidy policy of the state	Targeting of the state policy in the field of property management and in the framework of the subsidy policy with the priority of the production and economic effects can lead to a prolongation of the existing adverse trends in populations of endangered species.
The spreading of invasive alien species (the IAS)	Extrusion or disappearance of native species as a result of the spreading of the IAS.
Insufficient data	The lack of data on the species, undetected changes in populations, lack of knowledge of the causes of endangerment.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
2.2.1 Revise the System of Species Protection	An objective evaluation of the effectiveness of the current species protection is still largely based on the protection of individuals	Analysis of the efficiency of the species protection in the Czech Republic for the period 1993-2015	2017	Published analysis	ME
	Design and implementation of a new concept of species protection, taking into account the protection of the species habitats	Adopted amendments of legislation, the new system applied in practice	2022	Legislation, species protection system	ME
2.2.2 Monitor and Evaluate the State of the Species	Introduction of a system of regular monitoring and evaluation of the state of the species through red lists	Regularly updated red lists	2020	Publication of the red lists	ME
	Introduction of regular updates of the list of specially protected species on the basis of regular evaluation of their state	Updates of the list of specially protected species in the form of decrees (+ additional indicator NČI 45404)	2022	Updated regulation in effect	ME in cooperation with MA
2.2.3 Develop and Promote Special Instruments of Species Protection	Development and implementation of survival/ recovery programme and related measures	The number of implemented survival/ recovery programmes (+ additional indicators NČI 45201, 45400)	2025	Regular evaluation of the effectiveness of survival/recovery programme	ME in cooperation with MA
	Implementation of cross-border projects concerning the protection of targeted species populations	Permanent implementation of projects in cooperation with neighbouring countries	2025	Reports on the progress and outcome of projects	ME
2.2.4 Guide the Management of State Assets so as to Promote the Species Protection	Preparation of methodology and management rules with regard to the protection of endangered species and their habitats	Existing methodology and list of management rules	2020	Rules, implementation evaluation	ME in cooperation with MA, MF and MD

OBJECTIVE 2.3

Invasive Alien Species (the IAS)

Zlatobýl, Kokořínsko, photo: J. Děknicová

Invasive alien species pose a threat to the native species, communities and ecosystems around the world. They globally occupy a second place in the ranking of main factors (driving forces) endangering the existing biodiversity. There is also economic damage caused by these species, some invasive alien species (the IAS) may also affect negatively human health. The IAS are spreading easier and faster, both through intentional and unintentional spreading, as a result of increasing mobility. The Czech Republic is due to its location, dense settlement and dense network of rivers, roads and railways as the main roads of the spread of these species susceptible to biological invasions.

The foundation of the legislation relating to the regulation of the IAS spreading is now EP and Council Regulation No. 1143/2014, on the prevention and management of the introduction and spread of invasive alien species, which unites the EU approach in the management of the IAS and lays down limits for the species with a significant impact on the EU. In connection with the adoption of this regulation the existing national legislation in the field of alien species will be particularised, i.e., ACNL, Act No. 326/2004 Coll., on plant health and amendments to certain related acts, and other regulations, that are related to the use of alien species or the terms of the regulation or the removal from the environment related to the IAS (Act on the protection of animals against cruelty, Act on Game Management, Fishery, etc.). The requirements of Council Regulation (EC) No. 708/2007 concerning use of alien and locally absent species in aquaculture, which has not been fulfilled in the Czech Republic yet, will be introduced in practice as well. Regarding the requirements of the regulation of the EP and of the Council No. 1143/2014, it will be necessary to create a system of monitoring and control, to secure regulation to remove the IAS from the environment and to adopt action plans to restrict the ways of unintentional IAS spread. Creation of the conditions for prevention and rapid response, creation of a list of invasive alien species (black list), restrictions on geographically alien species in selected public land as well as in agricultural practices will in more detailed manner define and further develop an updated SNCLPP. The IAS issue is dealt with in the SEP framework, specifically in the Objective 3.2.3, which sets to limit the negative impact of invasive species on biodiversity.

The EU and Czech legislation, as well as both the abovementioned conceptual documents, based on the commitments accepted within the context of international multilateral conventions – in particular, Convention on biological diversity. In the framework of the Convention on the Conservation of European Wildlife and Natural Habitats (The Bern Convention), the European Strategy on Invasive Alien Species, which, inter alia, calls upon the Parties to create and implement the national strategies dealing with

the IAS, was adopted in 2003. At the same time was within the framework of the Bern Convention adopted a number of recommendations relating to the procedure in the case of specific IAS. In the context of the CBD, the IAS issue is directly addressed in the framework of the Aichi Target 9 and within the framework of the EU Biodiversity Strategy under the Objective 5.

CURRENT CONDITIONS

Information about alien flora of the Czech Republic is among the best in Europe. 1 454 alien plant species were recorded in the Czech Republic, and 61 of them are considered to be invasive. The most commonly implemented measures concerning liquidation of the species of Heracleum mantegazzianum, Reynoutria and Impatiens. Other species are removed from the environment locally as needed, e.g. Robinia pseudoacacia (steppe and rocky sites, e.g. in Podyjí/Thayatal River Basin NP), Lupinus polyphyllus (especially in submontane areas, e.g. in Šumava/Bohemian Forest NP, KRNAP),

Pinus strobus (České Švýcarsko/Bohemian Switzerland NP) or Rumex alpinus (KRNAP). With regard to the recently adopted EP and Council Regulation

No. 1143/2014, it will be necessary to pay attention to the species, which have not pose a threat so far in the Czech Republic, but their regulation is a of interest across the EU. Subsidies, such as Landscape Care Program (LCP) and Support of the Recovery of the Natural Features of the Landscape (POPFK), or projects of autonomous units, from the EU funds within the Operational Programme Environment or the LIFE Programme, can be used to intervene in the limitation of invasive plant species.

Data on invasive alien animal species and their spread are in comparison with the plants available in much smaller scale, plus not too much complete and fragmented, particularly invertebrates, where information is gathered mainly for economically and epidemiologically serious species (parasites). Out of a total of 595 alien animal species on our territory 113 of them are considered invasive in the Czech Republic. The most serious threat out of invertebrates are North American species of crayfish, which carries crayfish plague with fatal consequences on populations of native species of crayfish, Arion vulgaris or Harmonia axyridis. Out of vertebrates it is, for example, the Trachemys scripta elegans, some fish species (Carassius gibelio, Pseudorasbora parva, the genus Ameiurus), Cervus nippon and smaller carnivores such as Mustela vison, Procyon lotor and Nyctereutes procyonoides. Many of these species will be in relation to the EP and Council Regulation No. 1143/2014 subject to the regulation throughout the EU.

In 2014, there was due to increased need to inform the public about this issue on the website of NCA CR created a website concerning the IAS, including the pilot version of an Early Warning System. At the same time, there was in the framework of the objectives fulfilment of the existing Biodiversity Protection Strategy developed, as a basis for the IAS approach prioritising, a list of alien species that require special approach, so-called black, grey and white list of species. The species are divided into four categories according to the severity of their impact, the degree of the spread and the possibilities of dealing with them. The white list includes species that are not represented in the Czech Republic very much, or they are completely absent, but there is a danger of their spread.

Continuous monitoring of the IAS across the Czech Republic is still non-existent. However, a number of component activities arising from both the existing legislation (monitoring of some invasive plant species being executed by CISTA), and factual needs associated with the care for nature (e.g. monitoring of selected invasive species in the Moravian-Silesian Region, Heracleum Information System in the Karlovy Vary Region). The data collection on the spreading and the activity of the IAS is carried out also in the framework of habitat mapping updates provided by NCA CR, in the framework of the activities of research institutes

and universities (Botanical Institute of CZECH Academy of Sciences – including the preparation and updating of the list of alien plant species, and the monitoring of invasive and expansive weeds provided by the Crop Research Institute, etc.) or non-profit organisations (the Czech Union for Nature Conservation, ALKA Wildlife – the methodology of monitoring, control and disposal of American mink in the Czech Republic). Part of the acquired data is collected in the Founding Nature Conservation Database managed by the NCA CR.

It can be assumed that as a result of the ongoing globalisation and the expected climate changes, the number and frequency of the IAS will not decline, rather on the contrary. Models representing the scenarios of possible changes to the IAS range have been developed so far only for selected invasive alien species of flora in the Czech Republic.

PRESSURES/THREATS

PRESSURES	EVALUATION
The current spread of invasive species and their negative impact on biodiversity	It occurs under insufficient monitoring and only local cases of systematic liquidation and eradication (in particular plant species).
Breeding, planting and escapes	The existing breeding and other ways of using alien species of plants and animals pose a significant risk of the spread of invasive species or the establishment of new ones. A number of invasive species is not within their management or related economic activities sufficiently regulated (e.g. Cervus nippon, Carassius gibelio, etc.).
The introduction of new, inadequately tested species for farming and other purposes	There is currently an increasing interest in the use of non-traditional sources, and the introduction of new species, for example, in the framework of the phytoenergetics and other sectors. Also, the volume of trade is growing steadily as well as the range of species for hobby breeding and horticulture. Risk assessment system for the newly introduced species is not established and the public education and support of the preference for autochthonous species are not adequately ensures as well.
Increase of un-kept areas (abandoned areas, unkempt grounds, brownfields)	The spread of invasive species occurs in abandoned and poorly maintained areas. The risk increases in case of areas connected to water flows and linear constructions (transportation) that makes the spread much easier.

THREATS	EVALUATION
The consequences of climate change	Climate change may intensify the impacts of invasive species on biodiversity and the economy and at the same time allow the establishment or the spread of other invasive species that have not had suitable conditions in our county yet (reproduction of Trachemys scripta elegans, survival of Eichhornia crassipes, etc.).

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
2.3.1 Limit the Spread of Existing Invasive Species	Monitoring of invasive species in the most affected areas	Continuous monitoring	2020	Overall monitoring reports on the occurrence of the IAS	ME
	Disposal of existing invasive species in SPAs as well as in the open landscape	Number of the IAS, including their continuous removal in accordance with the action plans for each species (+ additional indicator NČI 45101)	2020	Data on the occurrence of invasive species, elimination plans, data on the elimination	ME in cooperation with MA
	Creation and updating of the IAS disposal methodologies	The methodologies in practice continuously used for all priority species (+ additional indicator NČI 45102	2020	Elimination plans, elimination reports	ME in cooperation with MA
	Optimisation of the subsidy titles for the IAS disposal	Optimized funding	2020	Grant programmes, registration of projects using these subsidies	ME
2.3.2 Prevent or Lower the Spread of New Invasive Species	Creation of a functional Early Warning System and places of rapid reaction responsible for the disposal of new IAS	Early Warning System and place of rapid reaction	2017	Early Warning System website, register of cases in the place of rapid response	ME
	Restrictions on intentional introductions of potential IAS (phytoenergetics, fisheries, public green areas)	Legislation governing the use and introduction of potential IAS	2020	Legislation, register of its application	ME in cooperation with MA
2.3.3 Include the EU legislation on the IAS in the Czech legislation	Amendments to the legislation of the Czech Republic by Regulation 1143/2014	Modified legislation, where appropriate, new legislation in this field	2017	Statutory Instrument	ME
	Establishment of the competence of various government departments and public bodies to this issue	Described competency in the statutory instruments	2017	Relevant legislation	ME in cooperation with the ministries concerned
2.3.4 Establish priority species and areas to regulate invasive species	Establishment of specific species on the basis of EU and national lists, against which there will be priority intervention and how	List of species	2020	ME website	MŽP

OBJECTIVE 2.4

Natural Habitats

Křivé jezero National Natural Reserve, photo: J. Miklín, NCA CR

Division of nature for the purpose of further examination and conservation is carried out at different levels. In Central Europe, including the Czech Republic, a detailed classification through the means of habitats is most commonly used. Natural habitats are typically created by several similar types of habitats. In addition to natural, or semi-nature of nearby habitats, can be very valuable habitats by man in different rates, thanks mainly to the settlement of endangered or rare species.

To obtain sufficient information, all natural and semi-natural habitats are regularly mapped in the Czech Republic. There are 157 types of habitats, which are included in the 60 types of natural habitats, in the Czech Republic. Most of them are dependent on human activities (i.e. targeted care, or any other type of use, e.g., mowing). Unnatural habitats (which according to the classification of habitats includes, for example, intensely cultivated meadows, forests cultures with coniferous or deciduous tree species, etc.) are predominant (they occupy 83% of the country), i.e. natural or semi-natural habitats occupy only 17% of the land area of the country.

The basic legislation for the protection of habitats is the NCA, which includes the requirements of the Habitats Directive (92/43/EEC). Unlike in the case of the species, there is not an individual list of specially protected habitats protected by law, i.e. habitats are protected only as objects of protection in the framework of SPAs, Sites of Community Importance or to a limited extent in the framework of the TSES or significant landscape elements.

In the international context the habitat protection is, similarly to the species protection, territorial protection and protection of ecosystem processes, one of the fundamental objectives of the Convention on Biological Diversity. The Aichi Target 5 of the CBD Strategic Plan is focused on the habitat protection. The EU Strategy for the field of biodiversity significantly touches upon the habitat protection in Objectives 1 (Action 1 and 4), and partially in Objectives 3 and 6. In the national Strategy documents, the protection of habitats is included mainly in SEP and SNCLPP (2009).

CURRENT CONDITIONS

As a result of the large geomorphologic diversity, geological evolution and relatively wide range of climatic conditions in the Czech Republic, there is a large number of different habitats. Some are typical for our Republic and can be found throughout the whole territory, but a significant part has been developed only on smaller areas, often only in specific regions. The reason is mainly the association to

specific conditions, or the fact that the habitat occurs only marginally, while the centre of gravity of their presence is in other parts of the European continent, therefore, they are often compromised in the Czech Republic.

Large single-purposely used homogeneous landscape features have been replacing the original lightly mosaic cultural landscape since the middle of the last century. On the other hand, habitats heavily influenced, almost conditional to human activity, disappear for the opposite reason, due to the lack of care, especially the absence of traditional, nature-friendly practices in the past bound to small agricultural activity (e.g. grazing land of small settlements, grazing a variety of farm animals - geese, goats, etc.) which is currently necessary with regard to maintaining the state of habitats and rare species dependent on them.

So far, the legal habitat protection, of habitats which are specifically protected only as objects of protection in SPAs and areas of European importance, has not been developed, their protection is supported through ME and MA programmes. This, however, is not sufficient to sustain their quality. The state of the natural habitats in the Czech Republic is from almost 75% negative. Poor quality, mainly caused by human induced pressures of the surrounding environment, adversely affects their ability to resist external disturbances and react to them quick enough. A number of factors adversely affect the habitat at the same time. The most endangered by termination or withdrawal are rare habitats, which were preserved only residually on small areas, often bound to specific local conditions, for example airborne sands or brownfields habitats or floodplain forests along river floodplains. These are the most endangered by the change of the way landscape is used and by changes in its water regime. Important aspects causing this trend are the change of agricultural cultivation and an increase of developed areas in accordance with the established use of areas in the territorial plan and at the same time the lack of compensatory measures in the case of the use of natural or semi-natural habitats for construction. In contrast, common habitats tend due to low demands on the environment to expand. There is therefore homogenising of nature, in which the diversity is disappearing and the areas of less common, in terms of the quality of the average to below-average natural habitats, increase. This is true even in the forests, which belong among the worst-ranked habitats. The stock of wood and the age of the forest stands are statistically rising, but so far, this situation does not significantly affect the state of natural forest habitats. It is also affected by the species composition of forests (as a result of the low rates of application of natural regeneration of unstable conifer monocultures still prevail) and the absence of aging stages and decay of vegetation (generally low age of differentiation of vegetation) that are bound to the numerous types of lower and higher plants and representatives of many taxonomic groups of animals.

An important way to conserve the selected habitats (and species) is the definition of the selected territories as so-called non-intervention, i.e. excluding the impact of humans. The aim in such areas is to protect natural processes. This is along with the habitat and species protection an important pillar of the biodiversity protection. Areas without human economic interventions are of fundamental importance, in particular for bird species linked to the formation of the forest, saproxylic forest insects, fungi and also soil organisms. Large natural areas, which are not directly influenced by humans, are the only places where the natural processes can be in their natural form. Substantial is also their importance as a comparative territory with economic landscape. The acquired information is necessary for correct establishment of farming methods in the rest of the landscape. However, the management is necessary in order to maintain certain types of habitats (e.g. in case of certain forest habitats, when it is necessary to restore or replace the traditional way of farming with the aim to optimise the species and age-differentiated composition of vegetation). It is therefore always necessary to search for the optimal solution (the preference of an appropriate farming method or support of natural processes) with regard to the locally defined target condition.

Monitoring of habitats is in the territory of the Czech Republic extensive and regular. It includes:

- Monitoring of the state of habitats in accordance with the Habitats Directive (from 2001: first of all the mapping and monitoring of habitats);
- Data from phytosociological images: Czech National Phytosociological Database (vegetation data).

PRESSURES/THREATS

PRESSURES	EVALUATION
Homogenisation of landscapes and intensification of farming	With regard to the current way of farming in the landscape, the area of its segments is increasing. Homogenisation has also a time dimension (the implementation of care within a short period of time in a large number of areas). At the same time changes in the management of forest, field and fishpond cultures lead to still higher intensity, small natural areas in the landscape are disappearing (disposal of hedgerows, bushes).
Eutrophication of the environment	The increase in nutrients and over-use of chemical fertilisers occurs in the landscape (especially with high content of nitrogen and phosphorus).
Urbanisation and excessive development	The ever expanding installation of peripheral parts of cities and villages, and the construction of logistic and shopping centres contributes largely to the destruction of natural habitats.

THREATS	EVALUATION
Expansion of the areas selected for the cultivation of energy crops	Introduction and expansion of crops with non-authenticated or adverse impacts on nature and the landscape can have a significantly negative impact in sensitive areas in terms of taking care of the natural and landscape heritage.
The prevailing technical recovery solution post-industrial and otherwise damaged habitats	It may continue to occur as a result of the preference of purely technical ways of habitat restoration to the disposal of naturally created communities that host endangered species.
Afforestation	Additionally conditional afforestation of non-forest land contributes to the homogenisation of the landscape.
Decline of wetlands in the landscape	The decline of wetlands has a direct correlation with the lack of water in the landscape, with a change in the local climate and the biodiversity loss.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
2.4.1. Ensure Legal Protection of Natural Habitats	Examination of the effectiveness and feasibility of the potential future system of habitat protection beyond the existing legislation	Elaborated analysis with identified options and proposed procedure	2018	Elaborated study / draft of legislative measures	ME
	Establish priorities in terms of the practical habitat conservation and care for them in the form of an Action Plan in relation to the system of SPAs	Creation and approval of an action plan	2021	Approved action plan	ME in cooperation with MA
2.4.2 Maintain or Increase the Size of Natural Habitats	Creation of a system of compensatory measure of the use of natural habitats in case of necessary use	Higher surface area of habitats created or restored when compensated (ha, increase in % compared to the existing state + addition indicator NČI 45510)	2025	Monitor the fulfilment of conditions when compensated	ME
2.4.3 Regulate the Targeted use of Inappropriate Species	Ensure regulation of the introduction and expansion of crops with non-authenticated or adverse impacts on nature and the landscape in sensitive areas in terms of taking care of the natural and landscape heritage.	Establishment of areas with restrictions on inappropriate energy crops planting, mapping basis (with regard to the additional indicator NČI 44301)	2018 (FGT) 2025	Layer of surfaces, statistics on the use of energy crops	ME in cooperation with MA
	Increase of the share of natural (created by spontaneous succession) reclamation of post-mining areas	The share of natural reclamation (increase in % compared to the current state + additional indicators NČI 45415, 45711, 46500)	2025	Binding conditions for reclamation, register of reclaimed areas	ME in cooperation with the MIT and the Czech Mining Authority
2.4.4 Ensure Protection of Natural Processes	Analysis of the issue defining visions of possible future definition and development of areas of spontaneous evolution of natural processes	Analysis contained in the updated SNCLPP	2017	Elaborated analysis	ME in cooperation with MA
	Examination of feasible possibilities of the application of the concept of the development of significant areas that have been left to natural processes in the conditions of the Czech Republic through an expert interdepartmental discussion	Analytical document with recommendations for further progress	2022	Analytical document available to the public	ME in cooperation with the MT, MRD, MIT, MD and MA

OBJECTIVE 2.5

Landscape

Peklo Natural Park, photo: Š. Mazánková, NCA CR

Landscape is a widely used term with many meanings. It generally indicates a part of an area – the area that man perceives, in which different processes and events take place and its current state is caused by past natural and human activities. Even though the landscape is defined as a selected part of the Earth surface with a combination of natural and cultural features and distinctive character, it should be seen rather as a holistic integrative concept at a higher hierarchical level with its own history, dynamics and special features. The relationship between man and landscape is an example of a direct feedback: the man is a part of it, and at the same time significantly reshapes it.

The landscape must be, therefore, seen as an interconnected mosaic of mutually influencing areas, which is currently taking shape rather than natural processes of human activity. In addition to the globally most important agricultural and forest management, it concerns the use and management of water resources (surface and groundwater) and the development of infrastructure. There are currently also significant systemic nature protection activities, especially the care of specially protected areas, which cover about 16% of the territory of the country. In addition to the SPAs, the territorial system of ecological stability of the landscape (TSES) remains a significant instrument for the protection of the landscape, its purpose is to maintain or improve the ecological stability of the landscape as a whole.

NCA ensures the conservation of biodiversity in the landscape area using the special nature conservation instruments (large and small SPAs, Natura 2000 sites, special species protection), general nature and landscape conservation (general species protection, TSES, significant landscape elements, landscape, protection of trees growing outside the forest, etc.). The most important legislative instrument from the perspective of the landscape, however, remains the Building Act (183/2006 Coll.), which regulates land use planning at all levels. The provisions in the field of agricultural, forestry and water management are also significant.

Objectives related to the biodiversity protection in open landscape are defined in the currently valid SNCLPP (2009) in Chapter 3.1 Landscape. The conservation of biodiversity in the open landscape is also a Strategic Framework for Sustainable Development of the Czech Republic (2010) in Priority Axis 4 Landscape, Ecosystems and Biodiversity and the State Environmental Policy. The Czech Republic also ratified the European Convention on Landscape.

CURRENT CONDITIONS

An important milestone of the development of the landscape was the socio-political change at the end of 1989, which fairly quickly enabled the repeated functioning market mechanisms. The main driving force for quality and the landscape structure change was once again (as well as for the so-called First Republic) the market economy, and in the case of the Czech Republic it significantly affected the restitution of land property, transformation of large agricultural associations and the privatisation of state assets. In the 1990's agricultural production has abruptly decreased, but it is now gradually increasing and intensifying. However, this trend is not uniform. The production is rather dropping in the peripheral and less fertile parts of the state, while in the central and lowland regions the pressure on the economic exploitation of the landscape rises. Due to the pressure on the intensification advances the qualitative degradation of the landscape as a whole (eutrophication, loss of soil quality, erosion, fragmentation). This has a direct impact on biodiversity.

The most visible manifestation of the social changes after 1990 was so-called suburbanisation (often unregulated expansion of urbanised areas - so-called "part-time development in the landscape in urban areas - urban sprawl"). There is under way the construction on so far undeveloped areas between existing settlements, the construction of new residential units, industrial buildings and storage unites in the open landscape on so-called greenfield. A related problem is the excessive removal of land from the agricultural land resources, its subsequent firming and covering with impermeable surfaces leading to its (often full) degradation and expansion of the developed area and areas for possible construction. This reduces the area of the Agricultural land resources and natural value of land cover and its functions, and thus the ability of the landscape to withstand external influences.

Specific monitoring of biodiversity in the landscape as a whole is not under way due to its complexity. Part of the information is provided by the monitoring of protected areas and species mentioned in the other chapters, which provide information about the individual aspects of the landscape.

PRESSURES/THREATS

PRESSURES	EVALUATION
Intensive farming in the landscape	As a result of intensive conventional way of agricultural and forest management occurs the homogenisation of landscapes.
Suburbanisation	The use of land for industrial and storage areas and for new residential construction reduces the total area of the open landscape, its environmental stability and it is partially a reason for its fragmentation.
Development of transport infrastructure	Linear transport constructions fragment the open landscape and negatively affect its basic features, both in connection with the disruption of ecosystems, and the landscape within the meaning of NCA.

THREATS	EVALUATION
The continuing pace of the use of landscape for construction at the expense of the natural, agricultural and forestry areas	If the present trend continues, there will be a significant reduction of the functions of the landscape and the subsequent accompanying phenomena (increased risk of floods, disappearing water resources for a prolonged period of drought, fragmentation of the landscape, etc.).
Advancing unification of the landscape	Land consolidation and alignment of the interface between forests and agricultural land or between individual forests significantly reduces biodiversity due to modifications of marginal or minority communities or purely production land. Yet these areas are fundamental for the conservation of biodiversity in the landscape.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
2.5.1 Limit the Expansion of Construction in the Open Landscape	The preference of the former industrial sites (brownfields) to new construction	Continuous use of industrial sites for new construction (+ additional indicator NČI 23300)	2025	Implemented projects, documentation of used areas	MIT in cooperation with MRD and ME
2.5.2 Improve Landscape Structure	Acceleration of the implementation of complex land modifications with an emphasis on high-quality implementation of social functions	Continuous annual increases in the volume of complex property alterations	2025	MA Register, the Cadastre of Real Estate	MA in cooperation with ME
	Implementation of the missing parts of TSES and the optimisation and improvement of its functionality	Implementation of the plans of the TSES components and their implementation from 2020 (+ additional indicator NČI 45501)	2020	Implementation plans and reports on their implementation	ME
	Support the creation and maintenance of scattered greenery (areas of non-productive functions)	Appropriate subsidy programmes	2025	Register of implemented projects, LPIS	ME in cooperation with MA
2.5.3 Improve the Landscape Permeability for Biota	Support the implementation of measures for the increase of permeability of the landscape within the complex land consolidation / replotting.	Increasing permeability as a part of the opening of the complex land consolidation (+ additional indicators NČI 46301, 46010, 45800)	2020	Evaluation of the implementation, the Cadastre of Real Estate	MA in cooperation with ME
	Limitations of the landscape fragmentation caused by the construction of new linear elements and settlements	Creation of appropriate methodological instruments (+ additional indicators NČI 46301, 46010, 45800)	2020	Application of methodological instruments	ME in cooperation with the MT and MRD
	Implementation of measures to protect the animals against negative impact of energy and transport infrastructure	Increase in the scope of the measures to reduce the mortality of animals in the context of the energy and transport infrastructure (+ additional indicator NČI 46301)	2020	Report on the implementation of the measures	MIT, MT in cooperation with the ME

OBJECTIVE 2.6

Settlements

Reclamation of the park in Olomouc, photo: SEF CR archive

Settlements represent a specific area in the context of the conservation and sustainable use of biodiversity, where it is possible to include the natural elements into more intensively urbanised environment and create very suitable conditions for the involvement of the general public and target groups of the population in the issue of the conservation of biodiversity. Urban landscape allows under certain conditions the biodiversity protection at all three basic levels (genetic, species, and ecosystem). It is important that the inclusion of natural elements in an urbanised environment significantly increases the quality of life of people and the opportunity for targeted and illustrative education about the importance of biodiversity.

The current rate of urbanisation reaches in Europe (the percentage of the population living in the city) approximately 70-80%, and in the last two decades it has rather seen an increase in surface area of cities and urban agglomerations than in the population growth in the cities. A similar trend can be observed in the Czech Republic, when mainly due to suburbanisation the expanding and associating of urban construction with adjacent communities, occupying the territory for construction and contributing to the fragmentation of the landscape occur.

Conserving biodiversity in the settlements is partially addressed in the framework of local Agenda 21 and the National Network of "Healthy Cities" and also in SEF, specifically in Priority 3.3 "Improve the Quality of Environment in the Settlements". The priority contains three proposals for measures to improve the system of greenery in the settlements and its structure, to strengthen the regeneration of former industrial sites (brownfields) and ensuring frugal management of water in the premises. These objectives and measures at the national level can be supported by adequate programs and subsidies, specific implementation and solutions are fully within the competence of individual towns, cities and municipalities.

The EU Biodiversity Strategy to 2020 does not exclusively mention the issue of urban biodiversity, however, it can be included in Objective 2, Action 6b) – Preparation of a Strategy for Green Infrastructure in Urban and Rural Areas of the EU. The CBD Strategic Plan also does not mention this issue directly in one of the Aichi Targets, but an Action Plan for Biodiversity in and Towns and Cities was drafted in the framework of the CBD.

CURRENT CONDITIONS

Evaluation of the current situation in the Czech Republic concerning the conservation and support of biodiversity in towns, cities and rural settlements is extremely difficult due to the small feedback in this area. Integration of the Priority Area 4.4 "Improve the Quality of Environment in the Settlement" into the Operational Programme Environment for 2014-2020, which will make it possible to carry out a variety of projects and measures, which should encourage biodiversity in towns and cities, can be regarded as success.

The issue of the need to conserve and enhance biodiversity in the settlements in the Czech Republic can be extended to almost all of the settlements with the compact urban structure, where there is a lower proportion of vegetation. In this respect, it is necessary to provide sufficient information to local governments and examples of good practice, which should be the main objective of the National Biodiversity Strategy in this field.

PRESSURES/THREATS

PRESSURES	EVALUATION
Awareness of urban biodiversity and its possible support	Communication strategy for the public oriented at the inhabitants of towns and larger settlements, which would provide basic information on how to conserve biodiversity in the urban environment and which would identify options, how to engage wider public itself or with the use of state aid, is missing. An adequate support of civil activities such as establishment of community gardens, etc., is missing.
Growing area of settlements without the conceptual creation of related green infrastructure	The need to create green infrastructure, which would increase the potential development of biodiversity in urban areas is not taken into account when planning in most cases.

THREATS	EVALUATION
The possibility to incorporate the conservation of biodiversity into the settlement planning is not utilised.	Not incorporating the issue of the conservation of biodiversity in towns, cities and settlements into zoning and development plans may lead to under-utilisation of the potential that the urban environment offers, not only because of the biodiversity itself, but also due to the ecosystem services and to the overall quality of the environment.
The continued reduction of natural areas including urban green areas in agglomerations	The local government may, in an effort to reduce the costs of care for greenery, ignore the functions of these elements and their role in the settlements, which include, for example the reduction of temperature in the summer or the reduction in water outflow from hard surfaces.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
2.6.1 Establish Standards for the Percentage of Greenery in the Urban Areas	Introduction of relevant methodological standards in the area of spatial planning	Updated methodology in the field of spatial planning	2020	Established methodological standards	MRD in cooperation with ME
	Regular education seminars for the responsible representatives of the authorities and officials of the state administration	Annual seminars from 2018 onwards	2025	Public opinion survey, the records of the seminars including feedback	ME in cooperation with MRD
2.6.2 Strengthen Biodiversity in Towns and Cities	Enable effective establishment/ restoration of functionally interconnected surfaces and features of residential green areas	Increase in implemented projects to 2020 (+ additional indicator NČI 45000)	2020	OPE Register, feedback through contact points for the implementation of the Strategy	ME
	Ensure methodological and other support for measures to conserve and enhance biodiversity in the settlements and during the construction	Methodological guide	2020	Number of implemented support by municipalities	ME in cooperation with MRD
2.6.3 Support Local Governments an Civil Activities and Initiatives that Contribute to the Strengthening of Biodiversity in Towns and Cities	Establishment of a methodological guide for municipalities with examples of good practice	Methodological guide	2020	Published publication, distribution, feedback through contact points for the implementation of the Strategy	ME
	Establishment of a communication strategy for the public and the authorities focused on the importance and possibilities of development of natural elements in the settlements	Applied communication strategy	2020	Questionnaire survey concerning the application of the Strategy	ME in cooperation with county towns

PRIORITY 3

Environmentally Friendly Use of Natural Resources

National Natural Reserve Pouzdřanská step-Kolby, photo: P. Holub, NCA CR

OBJECTIVE 3.1

Agricultural Landscape

Landscape near Ondřejov, photo: D. Turoňová, NCA CR

Continued deterioration of the state of biodiversity in agricultural landscape, whether it is the abundance of the species or the state of habitats, shows that it is necessary to make a significantly greater effort if the biodiversity is to be preserved and enhanced. The agricultural policy of the Czech Republic, which is mainly determined by the common agricultural and common fisheries policies of the EU, has a crucial role in this process. The main instrument of the EU and CR Common Agricultural Policy remains the Rural Development Programme with the main objectives including reclamation, conservation and improvement of ecosystems dependent on the agricultural sector, in particular through the agri-environment-climate measures and the support of landscape infrastructure. In the case of the EU Common Fisheries Policy then the Operational Programme Fisheries that shall among others promote forms of farming contributing to the maintaining or improving the state of the environment and biological diversity.

The main legislative instruments in the area of agriculture, which are related to the conservation and sustainable use of biodiversity include Act No. 252/1997 Coll., on Agriculture; Act No. 242/2000 Coll., on Organic Farming; Act No. 337/1992 Coll., on the Protection of Agricultural Land Resources; Act No. 254/2001 Coll. on Waters (Water Act), and a number of other laws, which are listed in the other separately prepared objectives of this Strategy.

In the international context, with regard to the CBD Strategic Plan to 2020, the issue of the protection of the so-called agro-biodiversity is directly addressed in the framework of the Aichi Target 7: "By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity" and also under Target 3 of the EU Biodiversity Strategy to 2020: "By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement in the conservation status of species and habitats." The mid-term review of the EU Strategy, which was prepared by the EC in 2015, found out persistent decline in biodiversity in the agricultural landscape as well as at the European level.

This trend can be reversed only if the environmental instruments, offered by the CAP, both in the framework of rural development measures and conditions for direct aid, are used more effectively and to a higher extent.

CURRENT CONDITIONS

Species richness bound to the agricultural landscape shows in many indicators in the Czech Republic a steady decline. In the years 1982-2007 the abundance of bird species of the agricultural landscape reduced almost in half. The indicator for common bird species of the agricultural landscape in the Czech Republic (state in 2000 is considered as 100%) declined from 91% in 2007 to 75.9% in 2013,; the value of the bird index based on a single species selection in the EU in 2008 was more than 97%. Similar negative trend can be observed in other groups of organisms.

The area of agricultural land in the Czech Republic was 4.229 million ha in 2010 and it is declining over the long term. Half of the agricultural land is located in LFA (less favoured areas).

Enterprises of legal entities dominate in the less favoured areas in the Czech Republic, where there is a high proportion of land in agriculture in the long lease or tenancy. In 2013, the share of 74% of the total area of the Agricultural land resources, which significantly limits the willingness and practical options of farmers to introduce "lease" land long-term measures. In general it can be stated that the reduced incentives for long-term and sustainable management of agricultural land are the main cause of the unsatisfactory state of the agricultural landscape.

One of the consequences is the growing focus on large, highly mechanised crop production (mainly grains and oilseeds). In the period 2007-2011 the livestock has been declining fairly quickly. The trend of decline in the health of farm animals has been observed in most countries of the EU as a result of economic difficulties in the livestock sector. These facts have resulted in, inter alia, reduction of the use of permanent grassland (lower need of fodder production and grazing), poor crop rotation practices (a small range of fodder plant cultivation on arable land) and the lack of manure, which in have overall adverse effects on the conservation of soil structure, fertility and biodiversity enhancement in agricultural landscape.

Seen as highly positive for biodiversity conservation can be the growing proportion of ecologically cultivated land and integrated production of fruit and vegetables. Newly entering small family farms with acreage in the tens of hectares are entering the organic farming. This trend should be supported to the greatest possible extent.

It represents a specific area of the agricultural land in Natura 2000 Network (there were 4.42% of agricultural land in 2013). Many of the Natura 2000 sites are valuable for their good agricultural management, so far, and it is therefore important to ensure that the friendly farming continued well into the future. As agricultural systems with high nature value (HNV) that contribute to the conservation of biological diversity and ecosystem services are considered to be particularly grasslands, which, given the natural conditions, should be applied in a targeted manner. In the Czech Republic the majority of grassland is located in less favoured areas (especially mountain LFA), where they make up 90% of agricultural land.

It is clear that the most important current issue in terms of maintaining and enhancing biodiversity in agricultural landscape is the large area of intense management of agricultural land. With the abovementioned current preferences in farming on larger areas, which are preferred in order to maximise the highest revenue, however unsustainable over the long-term, are directly related with other negative phenomena. It is, in particular, excessive use of nitrogen and phosphate fertilisers. In the context of farming there is more emphasis put on such use of fertilisers, which would prevent both N and P emissions into water, into the air, however there still is, inter alia, as a result of erosion wash off, excessive leaching of substances (nutrients and pesticides in particular) from the soil, which in turn enter the river network, and water reservoirs. Areas

of such vulnerable territories, which are defined according to the Nitrate Directive (91/676/EEC), are still expanding.

The cultivation and use of genetically modified organisms (GMOs) is also related with the use of agriculturally cultivated land. It can be stated that the issue of the use of genetically modified crops is a very controversial topic. In comparison with other parts of the EU, however, the genetically modified (GM) crops are approached with considerable caution and while using the precautionary principle. In the Czech Republic there can be only grown such GM crops, which have passed a rigorous approval process at the EU level, involving among others the evaluation of the potential risks of GM crops for human and animal health and the environment. In the Czech Republic there has been currently only grown GM maize for production purposes (since 2005), and it creates a minority share of the total area of agricultural production. It can be assumed that the interest of Czech producers regarding the growing of GM crops will develop in proportion with the degree of tolerance of GMOs by European consumers, and the related development of EU legislation. A similar risk could represent the introduction of new species/crops with invasive potential or effects on the gene pool of native species.

PRESSURES/THREATS

PRESSURES	EVALUATION
Reducing the number of livestock	The state of animal and soil burdening (the proportion of livestock units per hectare) is in the Czech Republic in the long term deeply below the EU average and has declined steadily in the recent years, which has negative consequences for both the state of agricultural land and for the biodiversity on agricultural land. A close link between breeding of animals and the conservation of biodiversity is, in particular, on the grazed habitats, but indirect links are evident even in the case of ruminants and the state of biodiversity on arable land.
Lack of know-how of workers in agriculture in the area of the conservation of biodiversity	Generally low farm management willingness to introduce new innovative measures and procedures, including measures to support biodiversity. Part of the problem of knowledge transfer is the lack of coordination of training of agricultural and forestry enterprises and the provision of advisory services.

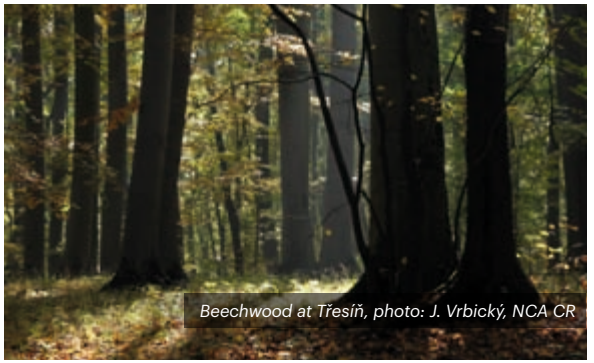
THREATS	EVALUATION
Permanent removal of agricultural land from the Agricultural land resources for purposes other than afforestation or grassing	Acreage land removed from the Agricultural land resources is rather stagnant but reliable statistical basis for the evaluation are missing. Growing economy, the low level of development of the transport infrastructure and the structure of the housing stock, however, suggest that the pressure on the permanent removal of agricultural land from the Agricultural land resources will continue.
Impacts of climate change	There is expected, for example, the shift of production areas, the spread and growing intensity of new pests and diseases of plants and the associated pressure on the greater use of plant protection products (pesticides). The more frequent occurrence of extreme weather events in the form of droughts or floods will cause more intense pressure to conserve biodiversity, erosion and degradation of the agricultural land and pollution of watercourses and reservoirs.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
3.1.1 Support Education and Awareness of the Farmers in the Area of the Conservation of Biodiversity	Nationwide training programme for farmers concerning the importance of the conservation of biodiversity	Continuously implemented courses for farmers and agricultural advisors from 2020	2020	Register of trained farmers and farm advisors providing advice related to the conservation of biodiversity	MA in cooperation with ME
	Agricultural consulting relating to the conservation of biodiversity	Functional system of agricultural consulting	2019	Register of consulting services relating to the conservation of biodiversity, including the feedback from farmers	MA in cooperation with ME
3.1.2 Support the Conservation of Biodiversity in Agricultural Landscape through Subsidy Programmes	Agri-environment-climate measures outside the integrated production	Measures set according to the effectiveness of the support of biodiversity (+ additional indicators NČI 94103, 94411)	2020	Register of PARD subsidies, monitoring and scientific research outcomes	MA in cooperation with ME
	Organic Farming	Increase in the number of organic farms, continuous increase of agricultural land in organic farming (+ additional indicators NČI 94103, 94411)	2025	Register of environmental entrepreneurs, LPIS, areas of agricultural land in organic farming	MA
	Standards of good agricultural and environmental condition	Higher number of standards of good agricultural and environmental condition (increase in % compared to the current state)	2025	PARD Register	MA
	Landscape features and ecologically used areas	A higher number of landscape features and ecologically used areas (increase in % compared to the current state)	2025	PARD Register	MA
3.1.3. Limit the Eutrophication and the Intensity of Farming in the Landscape	Reduction of risks while using fertilisers and pesticides in the agriculture and forestry sector by setting limits and the definition of the period and method their use	(Sub)legal Regulation, reduction the consumption of fertilisers and pesticides, fulfilment of the National Action Plan for the reduction of pesticide use in the Czech Republic	2020	Legislation, statistics on the application of fertilisers and pesticides in agriculture and forestry, reports on the implementation of the National Action Plan for the reduction of pesticide use in the Czech Republic	MA in cooperation with ME
3.4.1 Monitor the Management of GMOs and the Newly Introduced Species that May Have Adverse Effects on Biodiversity	Coordination of the activities of the supervisory bodies and the national network of GMO laboratories, financial insurance of checks	Continuously stable number of executed inspections, newly introduced detection methods	2025	Records of inspections, reports on the use of the detection methods	ME in cooperation with MA

OBJECTIVE 3.2

Forest Ecosystems



Beechwood at Třesiň, photo: J. Vrbický, NCA CR

Forest ecosystems are significant landscape elements and also the carriers of biological diversity. Biodiversity is important not only to the forest environment characteristic for special forests stands, as well as individual trees (e.g. as species habitats) and rotting wood left to a gradual decay. Forest as a multilateral provider of ecosystem services is legislatively protected from degradation and destruction. Its effective conservation and appropriate restoration remain one of the basic prerequisites for biodiversity conservation.

The most important documents of the fulfilment of the objective are the National Forestry Programme (NFP), which connects the concept of sustainable management of forests and the need for long-term improvement of the competitiveness of the forestry sector. The measures proposed in the NFP, which was agreed upon in the framework of the expert discussions across all sectors involved, are still relevant and valid. Another document is the SNCLPP (2009) which sets out the fundamental framework of use, care and protection of forest ecosystems in SPAs in open landscape. Another important document is the National Program on Conservation and Reproduction of Forest Tree Species Gene Pool. Some SEF parts are concerned with the support the conservation of biodiversity in forest ecosystems.

In the long term it was vital to adopt the Resolution on the General Guidelines for the Sustainable Management of Forests in Europe at the Conference in Helsinki, Finland in 1993. Forest biodiversity indicators have been designed to monitor and evaluate forest biodiversity in European countries. Czech Republic is a party to the CBD, within which it was created quite a number of specific instruments and methodologies, in the current Strategic Plan there are on the issue of the conservation of biodiversity in forest ecosystems focused Aichi Targets 5 and 7. The Czech Republic is also a party to the FAO, which is involved in the Global Action Plan for the protection, sustainable use and development of resources of forest reproductive material. The care for the biodiversity of forest ecosystems has also become a part of the EU Strategy in the field of the conservation of biodiversity to 2020, specifically Target 3.

CURRENT CONDITIONS

The area of forest land was in 2014 almost 34% of the Czech Republic. This area increases every year by approximately 2000 ha. Unfortunately, afforestation of originally non-forest areas, sometimes leads to the destruction of valuable habitats in the landscape. The area of coniferous trees has been gradually decreasing, in particular since the Act No. 289/1995 Coll., on Forests entered into force. The area

covered by spruce decreased compared to the year 2000, by 77 279 ha, in contrast, the proportion of deciduous trees, especially oak and beech, is increasing. There is an increase in the proportion of natural recovery. The proportion of deciduous tree species in artificial restoration has been around 38% for a long time. Another improvement is, however, weakened by inertia of farming methods, including interference with the species and spatial compositions of forest stands. The biggest risk of the sustainability of broad-leaved trees and fir trees in forest stands and the future growth of their share is their damage and gradual liquidation of long-term over manning cloven-hoofed game on most of the territory of the Czech Republic.

The total stock of wood in the forest has been increasing for a long time as well. Timber harvest has never exceeded the overall average growth since 2008. The share of the highest age classes (older forest stands) is increasing and the area of the oldest stands, which are very important for biodiversity, is expanding as well.

The ongoing climate change increases the demands on the forest management, based on greater use of natural processes and the diversification of the structure of forest stands. At the same time, forests must still cope with the impacts of pollution, especially recently with the increase of the quantity of nitrogen in the atmosphere.

Forests constitute one of the basic subject of conservation in all SPA categories and in Natura 2000 Network, with a wide range of measures from leaving forests without interference (part of the NP and NNR, NR) through semi-natural management (as a rule, I. and II. PLA zones and part of NPs), ad hoc management to normal sustainable management (usually III. PLA zones). The fulfilment of management plans for protected areas is one of the prerequisites for maintaining or extending the natural biodiversity in forest ecosystems. To maintain the biodiversity of the forest are also of vital importance in the territorial system of ecological stability Biocentre and the definition of forest tree species gene reserves. In both cases, the aim is to develop in these areas, nature forest management with the preferences of natural regeneration of genetically and otherwise valuable crops and approximate potential natural forest composition corresponding to the corresponding habitats. Normal farming forests have great potential, where in addition to the improvement in the species composition of the forest, it is necessary to conserve in the long-term the presence of a minimum percentage of dead and trees grown over common dimensions with a significant importance which is essential for the conservation of biodiversity. In terms of biodiversity, the relics of the original stands harvested in the past are traditional forms of low and middle grown forests. Reclamation or suitable replacement of these procedures can make a significant contribution to the conservation of a variety of species of certain habitats.

PRESSURES/THREATS

PRESSURES	EVALUATION
Reduction of the biological functions of forests	The key issues in forest management include decreasing the proportion of residues and wood retained to decay (standing and lying), harming the natural regeneration of forest tree species due to high states of wild cloven-hoofed game Inadequate drainage of forest roads and adjacent forest stands.
Implementation of new linear structures	Fragmentation and the use of land forests, degradation of forest ecosystems affected by the changes of hydrological conditions as a result of the reduction of the areas' natural retention and speeding of rainwater drains or surface water contamination by salting of highways can negatively affect the natural functions of forest ecosystems and soil in the vicinity.
Soil degradation by air pollutants, forest health	In many places in the forests of the Czech Republic, especially in mountain areas and along the borders, the procedure of eutrophication, chemical soil degradation and soil acidification and related flooding of soil cation profiles, are occurring. Long-term acidification of forest soils, however, is evident in other parts of the Czech Republic. Out of the recent pollutants growing nitrogen emissions, especially from mobile sources, are a big problem.

THREATS	EVALUATION
Changes in forest communities and populations	It can be assumed that the numerical increase in the abiotic constraints and their increasing intensity over time on habitat conditions raises unpredictable changes in the species composition, population density and the structure of forest communities, especially in the forests of lower forest vegetation levels. Significant changes in species populations can also be expected in naturally extreme habitats.
The loss of biodiversity at different levels – species, gene and ecosystem	In the area of forest tree species in the Czech Republic there is no loss of species, but the loss of genetic diversity and ecosystem diversity of forests. Forest owners have no motivation to protect valuable ecotypes of forest tree species and populations, they do not preferentially use material from the same natural forest area, but due to its lack they use more affordable reproductive material, and its use is enabled by the rules of transport given by applicable legislation.
The impact of invasive species on forest ecosystems	Invasive tree species for now cause to biodiversity just local or regional issues. A more distinct impact on the native species from the habitat perspective can be seen in the non-wood invasive species. However, with the growing changes of the conditions of a variety of natural habitats, spreading of invasive species, which causes a change in behaviour of native species and they will be also more accommodated to the changing habitat conditions and to the relaxed habitat, can be expected.
The Impacts of Climate Change	The cases of extreme climatic events (droughts and increasing heat, extreme torrential rainfall, flash floods, wind storms, etc.) that either accompany direct visible damage or destruction of affected forest stands, or having an indirect negative impact on forest ecosystems, are increasing.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
3.2.1 Ensure Sustainable Forest Utilisation	Reducing forest fragmentation	Pan-European indicator 4.7 of forest fragmentation	2020	Records of acreage of forest land	MA in cooperation with the MRD
	Minimising permanent use of forest land or limitations caused by construction	The area of forest land (%) + additional indicator NČI 94410	2020	Records of acreage of forest land, Spatial Development Policy of the Czech Republic, SDP, conceptual materials of concerned departments	MA
	Support of biological forest functions, in particular by increasing the proportion of residues and wood retained to decay (stationary and reclining)	The area leaving extraction residues to decay/retained volume of biomass (increase in % compared to the current state)	2022	Statistical outputs, NCA CR and other nature conservation authorities	MA in cooperation with ME
	Friendly farming, which uses natural reclamation of habitats and successively suitable types of tree species and adequate farming methods, e.g. prime, shelterwood system	Area of natural reclamation, representation of mixed forest stands, the Pan-European indicators for sustainable forest management 4.2 and 4.4 (+ additional indicator NČI 45900)	2025	Records of acreage of natural reclamation, representation of mixed forest stands, reports from the National Programme of Conservation and Reproduction of Forest Tree Species Gene Pool	MA
	Support of dynamic development of biodiversity in forest ecosystems of the corresponding stage of the development cycle of the forest in order to maintain the necessary level of its ecological stability	The continuous increase in the diversity of species composition of forests, the Pan-European indicators for sustainable management of forests 4.1, 4.3, 4.5, 4.8, 4.10	2025	Statistical outputs, NIL, publication (Green Report)	MA in cooperation with ME
	Development of a representative system of protected forest areas and areas with the restoration of traditional farming practices	The extended total area of the protected forests compared with the current status (2016) + additional indicator NČI 45711	2020	NCA CR, other conservation authorities	ME
	The systematic reduction of the supernumerary state of cloven-hoofed game, including wild boar, limiting the success of natural reclamation and negatively affecting the economy of forestry management. Prepare a proposal of a generally binding act with a system of deduction of level of hunting according to the ecosystem	States of cloven-hoofed game enabling natural reclamation of adequate tree species from the habitat and succession perspective.	2025	Conclusive evidence of the state of cloven-hoofed game and acreage of natural reclamation	MA

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
3.2.2 Support Appropriate Forest Tree Genetic Resources	The existence of support and management of gene reserves, support of approved selected reproductive material, support of the establishment and activities of the National Bank of Forest Tree Seeds and Explants	Pan-European indicator of 4.6; implementation of the National Program on Conservation and Reproduction of Forest Tree Species Gene Pool 2014 - 2018	2018	IS ERMA (the GENOFOND module), an annual review of the National Programme, information on the management of forest reproductive material of the Czech Republic	MA in cooperation with ME
3.2.3 Take Care of Favourable Conservation State of Soil and Water in Forests	Improving the state of the degraded soil, anthrophically burdened in the long-term, in particular by pollution	Processing balance sustainability of the nutrients in the production forest ecosystems	2025	Outputs of the monitoring of forest soils, balance sheet outputs, information for forest owners	MA in cooperation with ME
	Support of water retention in forest catchments and improving morphological and ecological status of water flows	The number of implemented measures/area in ha (forest stands with optimal water regime and retention) (+ additional indicator NČI 94414)	2025	Existence of measures	MA in cooperation with ME

OBJECTIVE 3.3

Water Ecosystems

Baroch Natural Reserve, photo: Z. Růžičková, NCA

The Czech Republic is situated in the watershed of three river systems -the Labe river basin, the Danube and the Oder. Quantity of water strongly depends on the spatial layout and the intensity of precipitation during the year. At the moment, the number and area of natural aquatic and wetland habitats decreases, despite the fact that these habitats are crucial for biodiversity conservation. It concerns flowing and stagnant waters (including underground, both natural and artificial ones), specifically the watercourses, reservoirs, lakes, ponds, flooded quarries, sand pits and gravel pits, ponds, springs, peat bogs, moors and raised bogs, the floodplains of the rivers, etc. The function of the natural standing waters has been mostly replaced by the artificially created ponds, which currently count more than 22,000. The character of all aquatic and wetland habitats is determined by the specificity of the hydrological dynamics of surface water and groundwater and their chemical and physical properties. They are therefore very vulnerable to insensitive human interventions when a response of the present species to these listed changes tends to be very fast

The aim of the SEF in the area of water is the creation of conditions for sustainable forest management with relatively limited water wealth of the Czech Republic. (SEF, priority 1.1 Ensure the protection of water and improving their status; but also priority 3.3 Improve the quality of environment in the headquarters, target 3.3.3 Ensure the environmentally friendly water management in settlement units). It concerns the conservation of the quality and quantity of surface water and groundwater in accordance with the legal requirements. The fundamental legislation of the EU it the Water Framework Directive – WFD (2000/60/EC) transposed into the Act No. 254/2001 Coll. (the Water Act), which governs the conservation of waters in the Czech Republic, their use and rights to them. ME together with MA shall annually report to the Czech Republic Government on the state of water resources in the Czech Republic, which describes and evaluates the statue of the quality and quantity of surface water and groundwater and the related legislative, economic, research and integration activities. An effective tool for the management of important and current water management issues and the improvement of the state of water courses, including biodiversity, became the planning in the area of water in accordance with the WFD, in particular entrenched in the national and component river basin management plans. The Czech Republic is a Party to the Convention on Wetlands, of international importance, especially as waterfowl habitats (The Ramsar Convention), in the list of wetlands of international importance is recorded 14 Czech wetland sites. In the CBD's programme of work on inland water biological diversity, the emphasis is given to the integrated care of water ecosystems which would result in

the sustainable use of valuable water sources and with the aim to conserve biodiversity. The basis for conservation of aquatic biodiversity lies in the ecosystem approach which includes monitoring and evaluation of biodiversity of water aquatic ecosystems, impact assessment, prevention of pressures in the framework of river basins and effective international cooperation in the area of management of water sources. The objective of water and landscape conservation is associated, in particular, with the Strategic Goals 6, 7, 11 and 14. The EU Biodiversity Strategy to 2020 touches upon the water conservation in its Target 1 (Action 1b) and Target 3 (Action 8b).

CURRENT CONDITIONS

After 1989, the impact of industrial and agricultural pollution significantly decreased. Thanks to the increase in the number of wastewater treatment plants the pollution of watercourses has declined significantly and there was a rapid and radical improvement in the quality of the water. Influences from point or non-point sources of pollution, however, have not been limited to the level of guaranteeing the conservation of biodiversity. However, due to the progressive intensification of agriculture at the moment, the agricultural pollution is rising again. The most important issue in this context is the quality of surface waters, especially their eutrophication. This process is a result of the excessive enrichment of aquatic ecosystems by nutrients (especially nitrogen and phosphorus), which support the development of primary producers, and there subsequently occurs either the overproduction of biomass phytoplankton or an increased development of water macro-vegetation. Eutrophication causes the combination of multiple factors, including area sources of nitrogen (especially intensively used agricultural soil fertilisation) and persistent accumulation of phosphorus in surface water from different sources (discharge of insufficiently purified waste water, agriculture). Also, the negative impact of acidification on biodiversity still occurs, especially in the oligotrophic mountain forest ecosystems. Gradually, the negative effects of micro-pollutants (pharmaceuticals, personal consumption, hormonal substances and other persistent organic substances) are detected. The Czech Republic became a Party to the Stockholm Convention, which calls for a ban in a long-occurring organic pollutants or their phasing-out of the production, use, export, or import. Key opportunities for the water quality protection are in the area of new technologies, research and adjustments to the conditions of subsidy programmes.

In the Czech Republic, the is conducted a number of programmes that support the revitalisation of watercourses, water retention in the landscape and the recovery of landscape structures that enhance the water regime: previously the Revitalisation Programme and now Restoration Programme of the Natural Features of the Landscape and, in particular, the Operational Programme Environment (ME). Nationally unified priorities are set out in the river basin district plans, in most cases, but they are not sufficiently implemented. Updates of the river basin management plans for the second planning period has already been done. In the case of increase of permeability concerning the migration barriers, the priorities are defined by the Concept of Clearing of River Network of the Czech Republic. The load level of aquatic ecosystems as water resources by agriculture, industry and other sectors is primarily reviewed within the EIA. In recent years, the development of the construction of small hydroelectric power plants, where it is necessary always in each individual case to define the limits in terms of affecting the character of the flow, flow rate, fragmentation etc., that it is necessary to adhere to, can be also observed

Other opportunities to increase the biodiversity of aquatic ecosystems include the revision of the fish restocking plans in running waters with regard to the current state of flowing waters and further effective prevention, control of invasive alien species and their removal from the environment.

The current monitoring of biodiversity in waters is regular in the Czech Republic and includes:

- Monitoring of ecological state according to the Framework Directive on Waters (since 2005)
- Monitoring of the state of species and habitat types in terms of their protection in accordance with the EU Habitats Directive (since 2005)
- Monitoring of the environmental conditions of wetlands of international importance (from 2014)
- Monitoring of birds in accordance with the Birds Directive (since 2004)
- Monitoring of aquatic birds in the Czech Republic (since 1973)
- International water bird census (since 1967)
- Winter water bird censuses in Central Bohemia (since 2003)
- The unified bird census programme in the Czech Republic (since 1983)

PRESSURES/THREATS

PRESSURES	EVALUATION
Technical adjustments to the water flows increasing their fragmentation and deterioration of ecological conditions	Problems persist in terms of morphological arrangement of the watercourse and its function as a habitat and a migration corridor. Primarily transverse structures on watercourses are interfering with the continuity of the water flow, including the waste mode. Fragmentation of the waterways greatly diminishes. Technical regulation of water flows are not significantly expanded, but historical modifications prevent the improvement of ecological state. Technical modifications of small watercourses in forests and streams will continue to some extent. The newly built cross construction on rivers must allow compulsorily migratory manoeuvrability.
Eutrophication of surface waters	Emissions of nitrogen and phosphorus from various sources are slowly decreasing (agriculture, the discharge of untreated waste water). Their negative impact is noticeable due to sensitivity of the aquatic environment and becomes one of the limits for the conservation of the biological quality.
Changes in communities and populations	Due to the influence of eutrophication and other environmental impact the change in communities, which are exacerbated by the direct exploitation of aquatic ecosystems (fisheries and others), occurs. Intensification of farming threatens both the area planted sparingly so far towards the natural environment.
The impact of invasive species on aquatic ecosystems	The impact of invasive species in the Czech Republic is noticeable especially in the aquatic environment, as it is a considerably dynamic environment with fast and well a response. Due to the nature of the aquatic environment, the eradication or suppression of this kind, are often very complex.
Intensive farming	Intensive agricultural mass production leads to the pollution of water sources and wet and waterlogged habitats, distorts the retention ability of the landscape.

THREATS	EVALUATION
Development of water transport	The planned construction of new waterways associated with the construction of major migration barriers, by modifying the troughs of water flows and affecting the connection of the tributaries and the hydrological regime, represents a significant threat in terms of degradation or destruction of natural habitats; from long-time perspective, it may result in the disappearance of some populations.
Development of water energy and need to snow-covering	Other water use can be critical for a variety of segments from the perspective of the functioning of flows of local ecosystems, the existence of local populations of endangered species and the coherence of the river network. This state will be deepened by climate change, particularly when due to uneven spread of the average annual rainfall.
Increasing the content of modern municipal pollutants	The effect of pharmaceuticals, personal consumption, hormonal substances and persistent organic substances is rising and the degree of influence of the different components of aquatic ecosystems as well as the effect of these substances in the aquatic environment as a whole are not fully demonstrated yet.
Climate Change	In the Czech Republic a threat to the water regime and as a result also of aquatic ecosystems in particular time and space distribution of precipitation, i.e. prolongation of droughts or intense rainfall is expected. In the context of climate change, we can expect a higher consumption of water flows in agriculture, household economy, energy and other sectors as the impacts of climate change can reduce the number of usable water resources and coverage of those remaining.
In specific cases, the construction of water tanks, recovery of ferry tanks, drainage of wetlands (soils in general)	Some of the measures proposed to deal with the consequences of the drought may be in direct conflict with the conservation of biodiversity. Drained wetlands, the ferry tanks or water reservoirs have less storage capacity than natural habitats, particularly in critical periods of drought, when the water level evaporation negatively impacts the balance of the flow, etc.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
3.3.1 Ensure a Holistic Approach to the Use of Water in the Landscape	The creation and approval of the national strategy of revitalisation and re-naturalisation of waterways, including the definition of significant water flows from the perspective of nature conservation	National and regional strategy or concept	2020	Published strategic documents/integration of the results into the updated River Basin Management Plans	ME in cooperation with MA and MT
3.3.2. Limit the Pollution and Improve the Physically-chemical Water Quality	Develop the network of sewage with tertiary cleaning (removal of phosphorus and pathogens)	The share of sources of pollution covered by the WWTP (+ additional indicators NČI 42206, 42207)	2025	Data concerning the development of WWTP and reports on the measures about the progress made in the areas of the catchment area for the period 2015-2021	ME in cooperation with MA
	Research of the influence of micro-pollutants on ecosystems and human health, and the adoption of relevant measures	Research projects (target value: 5), legislation and technical measures based on the outputs	2020	Study on the influence of PPCPs and POPs on ecosystems and species	ME in cooperation with the MH and MA
3.3.3 Restore Landscape Features, Ensure Permeability and Environmentally Sustainable Hydrological Regime of Watercourses	Methodological guidance and conceptual solutions of waste water management	ME guidance designated to the water management authorities, regional strategy	2018	Documents on the ME website	ME in cooperation with MA
	The concept of water transport	Document fully respecting the interests of the conservation of biodiversity	2018	Document on the MT website	MT in cooperation with the ME

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
3.3.4 Restore Landscape Components, Ensure Permeability of the Waterways	Disposal of ineffective cross barriers on rivers and the construction of the fish migration passages in accordance with the Concept of Clearing of River Network of the Czech Republic	Fulfilling the concept of clearing of river network of the Czech Republic (+ additional indicator NČI 46010)	2025	Data concerning the implementation of projects, the evaluation of the fulfilment of the Concept	ME in cooperation with MA
	Landscape structures and support of the implementation of the elements restraining the water in the landscape and to prevent excessive transport of nutrients and sediments into the streams in relation to the objectives and measures of the Rural Development Programme	Adequately established subsidy rules, continuous increase of their use from 2021	2021	Data concerning the implementation of the projects	MA in cooperation with the ME and MRD
	Re-naturalisation and revitalisation of watercourses	Reclamation of watercourses (target value: min. 300 km) (+ additional indicators NČI 46301 and 46505)	2025	Data concerning the implementation of the projects and measures about the progress made in the areas of the catchment area for the period 2015-2021	ME in cooperation with MA
	Support for the creation of conditions for natural reproduction of fish	The number of implemented measures/year, an upward trend (+ additional indicator NČI 96702)	2025	Data concerning the implementation of the projects and measures	MA in cooperation with ME
	Maintain the existing water regime or restore damaged forest ecosystems	Continuously implemented measures for water retention in forest habitats	2025	Acreage of forest soil affected by drought	MA in cooperation with ME
3.3.5 Reduce the Negative Impact of Intensive Fisheries/Fish Farming in Ponds	Support for non-productive functions of ponds, especially the eco-stabilising functions	(Sub)legal regulation, from 2020, continuous increase in the proportion of ponds functioning as semi-natural ecosystems	2020	Production statistics Data concerning the drawing upon subsidies The study of ecosystem services of ponds	MA in cooperation with ME
	Revision and update of the fish restocking plans at the level corresponding to the current environmental state and needs in specific districts and their parts	The number of fish restocking plans, revised agreement with CFU and MFU beyond the modification of their activities (target value of 1482)	2025	The revised fish restocking plans and analysis of their contribution, the data on the support of the state of the habitats and communities	MA in cooperation with ME
3.3.6 Increase the Retention Ability of the Landscape	Support for the conservation and restoration of wetlands in the landscape	The area of wetlands in agricultural landscapes	2025	Statistical Yearbook, the used sources of subsidies for the rehabilitation of wetlands in the landscape	ME in cooperation with MA

OBJECTIVE 3.4

Soil and Mineral Resources

Na Skalách Natural Monument, photo: S. Hospodková, NCA CR

Soil is one of the key ingredients that create the basic conditions for life on Earth. The type, composition and other characteristics of soil significantly influence the structure, composition and functioning of all terrestrial ecosystems and the services they provide. In addition to the production functions of soil, it has a whole range of non-productive functions – it is gene bank, and it is the habitat for numerous organisms (soil life), it has the ability to filter and retain rainfall, regulate the movement of water in the soil environment, remove foreign substances polluting the environment, in the event of favourable structure and chemistry significantly increase resistance and resilience of ecosystems and, last but not least, hold more than twice as much carbon than is contained in the air.

Biota is significantly involved in most of the listed processes and functions of soil. High species richness of the soil, in which occur most species of micro-mycetes, actinomycetes and bacteria, has a decisive influence on the overall cycle of substances in the soil environment.

Physical and chemical properties of the soil as the topmost layer of the Earth's crust are (excluding e.g. climatic conditions) significantly determined by soil-rock so-called parent rock. From the point of view of biodiversity and its conservation, geological bedrock does not represent an area of priority interest. However, the major problem remains some of the impacts of mining and quarrying.

The text of the Constitution of the Czech Republic, which imposes to protect agricultural land as a natural resources, translates into a whole series of laws, such as Act No. 17/1992 Coll., on the Environment, Act No. 337/1992 Coll., on the Protection of Agricultural Land, as amended, the law

No. 289/1995 Coll., on Forests, Act No. 44/1988 Coll., on Protection and Utilisation of Mineral Resources, Act No. 183/2006 Coll., on Spatial Planning and Building Code. In the Ministry of Environment protection of the soil is one of the key themes of the National Environmental Policy in the context of the Objectives 1.3 Protection and Sustainable Use of Soil and Rock Environment. In the issue of mining of mineral raw materials represents a key resource the document Raw Materials Policy and Strategy (currently-approved version 6/2016), which imposes the determination of spatial limits and deadlines for mining and quarrying in spatial development policy.

At the international level, some international multilateral conventions deal with the protection of soil (CBD, The UNCCD), international intergovernmental organisations, notably FAO. A thematic programme of activities dedicated

to the agro-biodiversity was created within the CBD. Within the CBD Strategic Plan 2011-2020 is the protection of the soil partially addressed in the framework of the so-called Aichi Targets No. 7, 8 and 15. Soil protection and soil biodiversity are also subject to Objectives 2 and 3 of the EU Biodiversity Strategy to 2020. From the scope of the thematic Strategy on Soil Protection referred to in The 7th Environment Action Programme implies the obligation for EU Member states to accept the objectives in the area of soil protection.

CURRENT CONDITIONS

The biggest threats to the sustainable use of the land as one of the key natural resources include the use of land, increased erosion (water and wind), acidification, contamination of land by alien substances and excessive nutrients and its overall deterioration and destruction due to inappropriate management. The loss of humus and other organic substances in the soil, the expansion of water erosion and technogenic soil compaction using heavy machinery weaken the ability of the soil to retain water as materia in the landscape and endanger the natural paedogenic processes. The area of the agricultural land is constantly shrinking (approx. 4.5 thousand hectares per year), while the area of forest land is, on the contrary, gradually increasing. The acreage of land registered as other land is increasing. From the perspective of biodiversity a significant negative phenomenon, in particular, the loss of soil organic matter and soil, remains. The content of humus in the soil significantly decreases with increasing intensity of agricultural management, since the increased aeration and intensified hydro-thermic processes in the soil absorb humification organic residues and improve mineralisation. Most soil life is bound to a sufficient amount of not decomposed or decaying organic matter. In the Czech Republic, about 40% of agricultural land is at risk through compaction. Soil compaction reduces the potency of the soil profile, the cycle of substances and water is negatively affected and the ability of water infiltration and retention, which is manifested in extreme climatic events such as prolonged drought and torrential rainfall associated with the floods, is decreased as a result.

In the year 2015 the amendments to the Act of the Protection of Agricultural Land Resources No. 41/2015 Coll., which allows for a more consistent protection, both spatial and qualitative, was adopted. Obligation to carry out the subsequent reclamation of the removed agricultural and forest land represents one of the major tools that alleviate surface soil decreases. To other instruments of ALR protection, in particular from the side of the Ministry of Agriculture, belong e.g. comprehensive landscaping, erosion control calculator, standards of good agricultural and environmental condition (GAEC), payment for the fulfilment of the conditions of agricultural practices favourable for the climate and the environment – greening, etc.

If the agricultural land is not sufficiently protected and the agricultural use of such land in accordance with the principles of sustainable development is not maximally supported, developed areas will be growing at the expense of it. Greater attention should be therefore given to the creation of zoning plans - towns, cities and municipalities should not change the plans within this process solely on the basis of the pressure of investors and developers. It is essential to protect undeveloped areas and do not allow ad hoc conversion of areas on the outskirts of the municipalities that are a part of the agricultural land resources, into a developed area.

In the field of mineral resources mining virtually all stages of the mining process (building of access roads, preparation of land, construction of infrastructure, mining itself, modification of the mined material and its transport, deposit of mining waste represented by waste rocks) have an impact on the biodiversity. On the other hand, in the last decades it has shown that the sites affected by the mining (gold-bearing deposits, quarries, sand pits, clay-pits, etc.) can be highly beneficial for biodiversity and nature geodiversity (see Objective 3.5).

ME when issuing a prior consent to the determination of the area for the purpose of oil mining or combustible gas under the Mining Act has decided to lay down the conditions concerning the conservation of the environment including the conservation of natural resources. For other types of bearings, the law does not allow such option. Effects of the natural resources mining on animals and ecosystems and soil are evaluated under the Act No 100/2001 Coll., on environmental impact assessment. NCA lays down as the public interest the nature and landscape protection, which provides, inter alia, reclamation and the creation of new natural valuable ecosystems, such as when recultivating and during other major changes in the structure and use of the landscape. Mining Organisation is required to ensure reclamation, which includes the reclamation pursuant to Act No. 337/1992 Coll., on the protection of agricultural land resources, or of law no 289/1995 Coll., on forests, of all land affected by mining and monitoring of storage space under the Act No 157/2009 Coll., on the management of mining waste and amending certain acts, after the end of its operation.

All of the above legislative instruments enable to take into account the interests of the conservation of biodiversity, but this approach is not mentioned explicitly. The Act on the protection of agricultural land resources enables to permanently withdraw the land from the agricultural land resources, if the protection authority of agricultural land resources found that this solution is the most advantageous in terms of the protection of agricultural land resources, the environment, and other legally protected public interests. The utilitarian aspect of the conservation of agricultural land resources with the highest value does not outweigh so far the requirement for the creation of new natural valuable ecosystems during reclamations according to the NCA.

PRESSURES/THREATS

PRESSURES	EVALUATION
Inadequate management of soils, leading to erosion and loss of organic matter	Inadequate intense forms of farming on agricultural land, leading to the reduction in the content of organic matter in the soil and soil compaction. The presence of organic matter is bound soil micro-organisms and other species of fauna that provide its breakdown, the improvement of the physical properties and increase in the potential of water retention.
Guided technical reclamation of all areas after mining activities regardless of their secondary succession stages	Reclamation of the mine dumps and other depots and exploited the quarries is costly and often implemented without regard to the aspect of the conservation of biodiversity. The unnatural ecosystems created are usually unstable and require additional expensive management for further maintenance (see Objective 3.5).

THREATS	EVALUATION
The consequences of climate change	In the Czech Republic, there are expected to be more weather extremes such as floods and drought. For these reasons, the risk of disturbing the natural infiltration and water retention in soil and soil degradation can be further intensified.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
3.4.1. Reduce the Risk of Water and Wind Erosion and Increase the Organic Matter Contained the Soil	The completion of the legislative process to amend the Act on the protection of agricultural land resources and consistent enforcement of legislative obligations	Higher quantity and better composition of organic matter put into the soil, implemented comprehensive landscaping	2020	The data of the State Land Office, situational and prospective MA reports on soil, reports of the Research Institute of Amelioration and Soil Conservation	MA in cooperation with ME
	Implementation of anti-erosion measures	The number of realized anti-erosion measures (+ additional indicators NČI 44301, 46520)	2025	Data of the State Land Office	MA in cooperation with ME
	Prevention of erosion threats to forest soils	Continuously implemented measures against erosion of forest soils (+ additional indicators NČI 94414, 46520)	2025	Records of the measures implemented, the acreage of forest soils at risk of erosion	MA

OBJECTIVE 3.5

Ecosystem Maintenance and Restoration

Natural reclamation of the coast – The Cep II Sand Pit
M. Hátle, NCA CR

In recent decades there have been as a result of human activity significant reshaping of landscapes with mostly negative impact on ecosystems, their functioning and ultimately on the services they provide, in the territory of the Czech Republic. This is directly related with significant reduction in biological diversity at all of its three basic levels. The current state of ecosystems has a part especially in the intensive agricultural production (associated with intensive modifications of the landscape – drainage, amelioration, reclamation, changing to arable land), forestry management, surface mining and industrial development since the second half of the

20th century. In the last 30 years the suburbanisation and spatial development of settlements, increasing share of developed areas and the development of transport infrastructure in particular have had a significant negative impact on ecosystems as well.

Nevertheless, a number of valuable parts of nature that enable the conservation and recovery of natural processes in the landscape remained in the Czech Republic, while the ability of ecosystems to perform a variety of functions and services depends on the degree of anthropogenic influence. It is entirely appropriate to emphasise that only a healthy ecosystem provides goods and services necessary for its continued existence to human society. In this respect, the activities leading to the conservation and reclamation of ecosystem and the maintenance of their production functions shall be regarded as the public interest.

Legal support for adequate conservation and reclamation of ecosystems provides the largest range of NCA, which creates the basic framework for the conservation of ecosystems through the instruments of a general and specific nature and landscape protection, in particular through the conservation and the creation of the territorial system of ecological stability, protection of important landscape components, large-and small-scale specially protected areas or the protection of Natura 2000 sites. Next, the Act No. 17/1992 Coll., on the Environment, identifies the principles of environmental conservation and giving economic instruments for environmental conservation. A truly effective ecosystem maintenance and restoration and ecosystem services are, however, issues which need to be dealt with globally in the framework of all sectors and policies (e.g. national and regional SDP).

The issue of ecosystem conservation is also dealt with in several international conventions. The main concept or paradigm of the Convention on Biological Diversity (CBD) has become the ecosystem approach as a coherent strategy

for the integrated care of the land, water and living resources that evenly supports their conservation and sustainable use. Conservation, protection and restoration of ecosystems are the main subject of the Aichi Targets 14 and 15 of the CBD Strategic Plan 2011-2020. The EU Strategy in the field of the conservation of biodiversity to 2020 provides for the conservation and restoration of ecosystems and their services as Objective 2.

CURRENT CONDITIONS

In the evaluation of the current state of conservation and restoration of ecosystems, it is necessary to at first define what exactly the term "restoration of ecosystems" in the possibilities of the existing legislation can be applied to. The territory of the Czech Republic represents a considerable amount of different types of ecosystems with different state from the perspective of their stability, viability and integrity, extent of anthropogenic influence, or damage. From the perspective of the conservation of biodiversity, it is possible apply the evaluation of the state of the ecosystems to the state of the natural habitats, it is more complex, however, in the case of unnatural habitats that have been significantly modified by human activity. For this reason, there is a lack of information about the natural state of the ecosystems as the reference levels, which would have enabled to establish the target state, from which the summary of activities and actions that need to take place to achieve it could be derived. A very useful instrument for mapping of the state of all types of ecosystems could be the evaluation of ecosystem services as part of the assessment of ecosystem integrity (see Objective 4.3). This concerns in particular the reclamation of those ecosystems that are affected by human activity (ecosystems at arable land, river ecosystems, degraded grassland vegetation or natural composition of forests etc.). Due to the fact that it has not been possible to use the concept of ecosystem services for this purpose yet, it is necessary to monitor and extend existing measures, including existing national programmes and similar EU programmes, within which it is possible to reclaim the ecosystems (e.g. LCP, POPFK, OPE, RDP).

Activities leading towards the conservation and reclamation of ecosystems are relatively satisfactory SPAs, particularly in the small-scale, and later in the first zones of NPs and PLAs, provided by the plans of care and regular inspections, and in the Natura 2000 sites. In the open landscape, if the objective is to conserve and ideally reclaim the species richness of the communities, plants, animals and other organisms, it is necessary to ensure as much as possible the traditional ways of management in secondary habitats (secondary meadows and grasslands), and mostly rule out the intervention in the (primary) natural habitats (e.g. rocky steppes, peat bogs, some forests with natural species composition). A different situation occurs in heavily disturbed to devastated ecosystems (e.g. quarries, surface mines, etc.), where on the contrary, it is appropriate to leave a spontaneous succession, together with appropriate interventions of care, with some exceptions. In current practice, however, this procedure is not sufficiently used, which is to some extent due to the existing legislation. Restoration of semi-natural or otherwise disturbed by mining territory certainly is not the only way to deal with the issue of the integration of the most disturbed areas to more naturally rich landscapes, however, it should become, even if due to a prospective change of legislation, a great alternative to the prevailing technical reclamation of land, as it has been the case in many developed countries (e.g. Germany, where 20% of the area is by default allocated for semi-natural reclamation).

PRESSURES/THREATS

PRESSURES	EVALUATION
The continued trend in the use of the landscape	To the described important ways of the use of landscape in the recent years approach other groups of intentions with a significant negative impact on the ecological stability of the landscape, or on individual ecosystems.

THREATS	EVALUATION
The conservation of the ecological stability of the landscape covering the protection of the ecosystem is not perceived as public interest	The application of the public interest in the conservation of the landscape is perceived as restricting of the land ownership rights; there are not sufficiently identified benefits of the existence of semi-natural ecosystems, or the exploitation rate of ecosystem services in the society.
Insufficient use of expertise (scientific) information on the evolution of the status of ecosystems and the possibilities for their conservation and reclamation or compensation	The ever increasing amount of expert information and scientific outputs is not sufficient enough in practice.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
3.5.1 Reduce Negative Effects of Suburbanisation on Ecological Stability of the Landscape	Preferential use of former industrial sites (brownfields) for construction	Continuous use of industrial sites for new construction (+ additional indicator NČI 23300)	2025	Implemented projects, documentation of used areas	MIT in cooperation with MRD and ME
	Precise by the means of methodological activities the evaluation processes of effective use of developed areas and assessment of the need to define areas eligible for construction in zoning plans	Elaboration of adequate methodology	2020	Adequate methodology	MRD in cooperation with ME
3.5.2. Improve the Protection of Significant Landscape Elements	Examine the adequacy of legislation in the field of the conservation of meadows when implementing the construction and limiting the area eligible for construction in diluvial areas	Finished revision and eventual suggestions of legislation amendments	2020	The results of the review of the legislation	ME in cooperation with MRD
	Unification of the access to ILF registration, the introduction of the ILF central register	Methodological material	2020	ILF Register	ME
3.5.3 Increase the Share of Reclamation after Mining by Spontaneous Succession	Higher representation of semi-natural ways of the renewal in the reclamation practice, the use of spontaneous succession as recovery instrument	(Sub)legal regulation, provided for 20% of the area for spontaneous succession plans in addition to reclamation of land temporarily removed from the ALR	2025	Reclamation plans, the results of the mapping	MIT in cooperation with the Czech Mining Authority and ME
3.5.4 Improve Landscape Connectivity	Systematic revitalisation of dysfunctional (designed) syntactic part of the TSES	Continuous revitalisation of TSES (+ additional indicator NČI 45501)	2025	Zoning plans, database of implemented measures	ME

OBJECTIVE 3.6

Sustainable Utilisation of Genetic Resources

Breed of a Czech pig – Přeštické černostrakaté prase, photo: ME archive

The creation, utilisation and cultivation of genetic resources for food and agriculture makes up part of the national natural and cultural heritage. They include the part of biodiversity that was historically formed in agricultural systems by intentional human activities, i.e. by the selection, and later by the improvement, of crops and livestock. They also include related wild forms of agricultural crops and some of the species and subspecies of wildlife, such as some freshwater species of fish or bees. Micro-organisms and small invertebrates, which significantly contribute to agricultural production and its protection, or directly to its processing and utilisation, can also be counted among genetic resources. Genetic resources for food and agriculture are used in traditional and organic farming, conventional and modern breeding, in gene engineering, and in biotechnology.

Conservation and long-term preservation of genetic resources is exercised in gene banks. Seeds, pollen or whole parts of plants; semen, embryos, animal tissues; micro-organisms and small invertebrates, etc., are preserved on a long-term basis in controlled conditions. Field gene banks preserve individual plants (e.g. fruit and ornamental trees, grapevines or hops) in their living form. Genetic resources of animals are somehow specific, as they are mostly preserved as living individuals by livestock producers or in their natural environment.

The issue of genetic resources for food and agriculture is dealt with mainly by Act No. 148/2003 Coll., on plant and microorganism genetic resources. The Act does not apply to genetic resources that form forest reproductive material. The second piece of legislation is Act No. 154/2000 Coll., on the cultivation, breeding and registration of livestock, and on the amendments to certain related laws (the Breeding Act).

The National Program on Conservation and Utilisation of Plant, Animal and Microbial Genetic Resources for Food and Agriculture is a document of a conceptual character published by the Ministry of Agriculture every five years. The current Programme is in force for the period 2012-2016 (hereinafter referred to as the "National Program").

In the framework of the State Environmental Policy for the period 2012-2020, through the abovementioned documents, the Objective 3.2.2 – Limitation of Loss of Native Species and Natural Habitats, and measures to ensure the 3.2.2.2 Conservation and Sustainable Use of Genetic Resources of Animals, Plants and Micro-organisms are met.

Convention on Biological Diversity (CBD) is the umbrella convention in the field of international law. Within the CBD the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (the so-called ABS) was negotiated in 2010. The Nagoya Protocol defines genetic resources and establishes basic principles for the provision between users. The European Union is also a Party to the Nagoya Protocol and with the aim to implement its provisions, it has adopted the Regulation No. 511/2014 on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union and the Commission Implementing Regulation (EU) 2015/1866 of 13 October 2015 laying down detailed rules for the implementation of Regulation (EU) No 511/2014 of the European Parliament and of the Council as regards the register of collections, monitoring user compliance and best practices.

As regards the area of plant genetic resources, since 1983, the Czech Republic has been a member of the European Cooperation Programme (ECPGR) and it has been a Party to the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) since 2004. The Czech Republic is actively involved in the activities of the European Regional Focal Point for Animal Genetic Resources (ERFP) in the area of animal genetic resources. Collections of micro-organisms have become part of a series of international structures, such as The World Federation for Culture Collection (WFCC), the Federation of European Microbiological Societies (FEMS), European Brewery Convention (EBC), the European Culture Collection Organisation (ECCO), and many others.

CURRENT CONDITIONS

The framework of the National Programme on Conservation and Utilisation of Plant Genetic Resources and Agro-biodiversity (National Plant Programme) ensures the cooperation of 16 departments dealing with genetic resources of agricultural crops in collections, documentation, characterisation, basic evaluation, long-term conservation and exploitation of those resources. The expert guarantor and the coordinating institution of the program is the Research Institute of Crop Production, Prague (hereinafter called the RICP). The number of items in the active collections in the Czech Republic has reached a total 53.2 thousand items at the end of the year 2014, which belong to 1,173 plant species. From the overall range of co-elections , the generatively propagated species represent 81% and vegetatively propagated 19% of plant genetic resources. A significant area of the use of genetic resources within the framework of the National Plant Programme also represents the research focused on the rescue, gathering, conservation and utilisation of gene pool of plants to restore the landscape of the Czech Republic which is e.g. implemented by the Silva Tarouca Research Institute for Landscape and Ornamental Gardening (RILOG).

At the end of 2014, a total of 34 species and breeds of farming animals was supported by the National Programme of Conservation and Sustainable Use of Animal Genetic Resources (National Animal Programme) . The cryopreservation was carried out in a standard manner as an integral part of the conservation programme of the species and breeds of animals. The reproductive material is kept – a collection of insemination batches and embryos; and also material designed especially for the characterisation and description of genetic resources, monitoring changes in populations and the study of the properties of the breeds in the molecular-genetic level, in particular blood, saliva, hair, and other tissues suitable for DNA isolation.

A National Programme on the Genetic Resources of Microorganisms and Small Animals of Economic Importance (National Micro-organism Programme) brings together 20 collections of micro-organisms and small animals that have kept in 2014, a total of 6,503 strains of tribes of genetic resources. Samples provided from it are commonly used as standards for expert services (identification of organisms, microbiological analyses and biochemical determination, training, and mentoring), as a source of infectious material

for breeding purposes, and quality control, and last but not least for the solution of scientific and research projects and as a study material at universities and high schools. The expert guarantor and the coordinating institution of the programme is the RICP.

PRESSURES/THREATS

PRESSURES	EVALUATION
Unstable and insufficient financing of the National Programme on Conservation and Sustainable Utilisation of Genetic Resources of Plants, Animals and Micro-organisms	The National Programme on Conservation and Sustainable Utilisation of Genetic Resources of Plants, Animals and Micro-organisms is financed in the form of subsidies. The funds are approved as a part of the annual budget of the Ministry of Agriculture. In the case of reduction or tying of public funds, there is a pressure on capping existing aid, which can lead to destabilisation of the Programme and the risk of devaluation of already invested funds and irreversible deterioration of the genetic resources held in the long-term, is created.

THREATS	EVALUATION
The lack of support for research	Working with genetic resources, in particular their systematic evaluation and characterisation should be a standard part of departmental research subsidy programmes. The National Programme begins to, despite the undeniable successes, fall behind the rapid technological advances in more advanced countries, in particular in the area of systematic reviews of gene pools.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
3.6.1 Ratify the Nagoya Protocol to the Convention on Biological Diversity	Appropriate measures allowing the Czech Republic to become a Party to the Nagoya Protocol – national legislation	Legislative provisions, continuous fulfilment of the measures referred to in the current Protocol from 2017	2017	Collection of Laws of the Czech Republic, Register of measures	ME in cooperation with MA
3.6.2 Strengthen the Research in the Area of Genetic Resources of Plants, Animals and Micro-organisms Relevant for Food and Agriculture	Strengthening the capacity of national and departmental research programmes in the field of genetic resources, biodiversity, and agro-biodiversity, the strengthening of inter-agency cooperation in the area of biodiversity research	Continuous increase in the number of funded projects (+ additional indicator NČI 20900)	2025	Annual assessment reports of the research agencies and programmes	MA

PRIORITY 4

Strategic Planning and Policies

The Municipality of Litvínovice, photo: J. Hodač

OBJECTIVE 4.1

Providing Up-to-date and Relevant Information

Monitoring of Palmate newt, photo: V. Říš, NCA CR

It is necessary to recognise the quality and value of biodiversity, not only for humanity, but also in order to ensure the life of all living organisms, in case of the conservation of biodiversity. Unlike the other components of the environment, it is possible to affect and quantify the biodiversity only to some extent as a result of its overarching nature, complexity and dynamics. The essential instrument to obtain the knowledge is first and foremost the research focused mainly on species, communities, in both strict and wider meaning of otherwise defined parts of ecosystems. The research of genes gains importance due to the development of technologies.

After obtaining the basic knowledge, it is time for a series of one-off collection of data on the target phenomena (inventory) or methodically uniform, periodically repeating, long-term and standard methods for the carried out monitoring. In recent times the collection of information and data that are being executed by laics and known as civic or citizen science has been also increasingly implemented. The aim of all these activities is to get enough information about the state, changes and development trends of selected/model components of biological diversity and on the basis of these findings, to correctly identify the priorities for their conservation.

The strategy for research and monitoring of the state of biodiversity, including the subsequent use of the information is not compact in the Czech Republic at the legal level. Individual statutory provisions enumerate the activities partially, often without connections to other activities. Regardless, the fundamental legislation remains in this area NCA. It has been transposed into the legal order of the CZECH REPUBLIC, the EU Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC). This has legally established the so-called monitoring of the state of habitats and species. The Act on the provision of information on the environment (No. 123/1998 Coll.) is important as well. Its effectiveness has greatly expanded with the Migration Directive (Infrastructure for Spatial Information in Europe), which imposes to the public sector an obligation to collect data in a standardised manner and share them with the public. At the strategic level the SNCLPP (2009) is mainly focused on the collection and relevant use of information and data. In terms of research, the fundamental legislation provide the Act on science, experimental development and innovation from public resources (No. 130/2002 Coll.), establishing the Technology Agency of the Czech Republic, responsible for the overall coordination of applied research and experimental development.

The Czech Republic has become a Party to a relatively large number of international multilateral conventions, agreements

and protocols aimed at not only effective transnational conservation of biodiversity, but also at the necessarily associated collection and evaluation of information. A good example remains e.g. Convention on the Conservation of European Wildlife and Natural Habitats (The Bern Convention), due to which the Parties not only in the EU but also in the wider Europe share information about the state of selected species and habitats and coordinate their international protection and care. Regarding the sharing of existing information with the public The Convention on access to information, public participation in decision-making and access to justice in environmental issues in the EU (the Aarhus Convention) is key, due to the Convention the public has not only ensured the right to up-to-date information about the environment, but also the right to participate in decisions about its condition. The objective is associated, in particular, with the Strategic Goals 19. The EU Biodiversity Strategy to 2020 touches upon the topic in Objective 1 (Action 3 and 4).

CURRENT CONDITIONS

In the Czech Republic there is a long and rich tradition of biological research, which is confirmed by the relatively large number of experts in the field and in comparison with other European countries a significant number of institutions focusing originally mainly on research, newly on monitoring or the conservation of biodiversity. The Czech Republic is in the area of biodiversity research and monitoring a fairly well-known authority abroad.

The knowledge about biological diversity was increasing at the end of the last millennium. However, various activities at the national level were not linked. It basically concerned, except for a few exceptions, time-limited projects. The obtained data remained in the awareness and ownership of individuals, in a better case, of institutions. An important milestone was the entry of the Czech Republic to the EU in 2004 and the newly introduced obligations of the state (especially the fulfilment of EU legislation in the area of nature and landscape conservation, in particular the creation of the Natura 2000 Network). Due to the preparation for this step, the first surface inventory of species and habitats was launched in 2000 (completed in 2004). The results are updated on a regular basis in the context of the monitoring of the state of habitats and species, provided by the Ministry of the Environment. The territory of the Czech Republic has also, in this respect, become one of the best studied and monitored throughout the EU. An important aspect of systematic data collection remains in electronic form through the Nature Conservation Information System, operated by the NCA CR.

The current national policy of applied research, experimental development and innovation favours applied research, which has results usable in practice. Similar projects are supported, in particular, by the Technological Agency of the Czech Republic, which assigns the selected topics mostly in agreement with the institutions of the public administration. In the case of basic research supported by The Czech Science Foundation (GACR) there is insufficient communication with the practice from the perspective of the needs of the state administration in the field of nature conservation. In general, the research is, however, focused on the biodiversity in Czech Republic rather on the edge of scientific interest.

In addition to the activities of the public administration, there is, due to the development of technologies, an expansion of the collection during the research activity, both in the form of remote sensing, as well as through special applications in the field. A typical example is e.g. The National Forest Inventory, combining both approaches. At the same time, the interest and involvement of the public in obtaining, maintaining, evaluating, and disseminating data on selected folders of biodiversity, is gradually developing. BioLib is an activity based on voluntary contributions (Biological Library, available on the website at www.biolib.cz).

Although there is quite wide knowledge on biological diversity in the Czech Republic, there has not been adopted a relevant set of indicators at the national level, which could

standardised the way to measure the state, changes and development trends and evaluate the success in achieving the objectives, target and goals set out in the legislation and strategic or conceptual documents. The objectives which are often vaguely defined and difficult to measure are the problem.

Monitor the state of biodiversity in the territory of the Czech Republic is carried out mainly at two levels:

1. Public Administration

- Monitor the state of species and habitat types in terms of their protection in accordance with the Birds Directive (since 2005)
- Monitoring of ecological state of waters according to the Framework Directive on Waters (since 2005)

2. Academic and non-governmental sphere

- The unified bird census programme in the Czech Republic (since 1983)
- BioLib (since 2010)

That list includes only the most important activities. Additional, specialised or only partial or biodiversity marginally related activities are listed in the other chapters of the presented Strategy.

PRESSURES/THREATS

PRESSURES	EVALUATION
The lack of material and financial support of the adequate biodiversity research biodiversity	The biodiversity research is often underrated in favour of topics that have a direct effect on the economic prosperity of the society. There is often the reduction of financial assistance in the area of research and monitoring of the state of biodiversity below the level at which it is possible to get for listed resources enough high-quality outputs. The budgets are raised disproportionately to it, e.g. the technologically interesting remote sensing of soil, which shall unrealistically replace field surveys in the future.
The financially underrated monitoring of the state of habitats and species and other related activities	Monitoring of the state of habitats and species is a key activity, through which the largest amount of relevant data is received. Since its launch in 2005, the budget has dropped to a quarter of its original amount. Among other things, the monitoring of birds and bird areas has been changed as well and the collection of data on some of the other groups of species has been significantly limited.

THREATS	EVALUATION
Missing concept of collection and evaluation of data and information	The Czech Republic is missing a single concept of the collection and use of information about biodiversity. All reached and very often successful results are based primarily on the initiatives „from below“ (bottom-up approach). The specified condition is caused by the existing fragmentation, and the absence of biodiversity conservation objectives, goals and targets. One of the few available summary information sources is Founding Nature Conservation Database (NDOP), managed by the NCA CR, however without securing sufficient support, both financial and human resources will not be able to take advantage of its possibilities in the expected and desired range.
Failure to respect the results of the evaluation of the state of biodiversity	The results so far are not sufficiently used and respected in the evaluation of the current state and the systematic planning of future activities. This happens regardless of the fact that the evaluation based on existing data is feasible. Individual choice is preferred over systematic and data-based approach.
The lack of sharing of information with the public	A major weakness is an inability to adequately communicate the objective findings with the general public. This is manifested in insufficient social interest in the support of nature conservation. The problem is that technical information is often not translated into a comprehensible language, and there is also generally low willingness to perceive from the public as a key partner.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
4.1.1 Conceptually Ensure and Coordinate the Research and Monitoring of the State of Biodiversity.	The creation of a nationwide concept with the identified priorities for science and research in the area of biodiversity	Created concept	2018	Approved concept, implementation of research R&D projects, CRDI, TA CR	ME in cooperation with MA
	The coordination of the collection and sharing of data and information in the form of platforms of cooperating institutions	Functioning system of cooperation between the involved departments and institutions	2020	Results of the cooperation	ME in cooperation with the departments concerned
	Establishment of a set of indicators of the state, changes and trends of model components of biodiversity (including settlements) and related activities in relation to the strategic goals of nature conservation, the introduction into practice	Created set of indicators	2018	Assessment based on established indicators	ME in cooperation with the MA and MRD

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
4.1.2 Communicate the Result to the Public	Regularly issued report on the state of biodiversity in the Czech Republic for the broad public, publication activity and promotion	Expansion of the chapter on the state of biodiversity in the Czech Republic in the framework of the periodic Reports on the Environment of Czech Republic, publication of national reports for the CBD	2020	A survey focused on public awareness of the state and problems of biodiversity protection	ME
	Creation of opportunities for public involvement in the data collection (civic science)	5 separate targeted projects	2020	Increase the number of regularly contributing volunteers	ME in cooperation with MA
4.1.3 Decide and Strategically Plan on the Basis of the Results of the Research and Monitoring of the State of Biodiversity	Update of the national natural and landscape protection programme in the Czech Republic on the basis of current knowledge, verified methodological procedures and evidence	Updated SNCLPP CR	2017	Approval of the programme	ME
	Establishment of the list of priorities for short-term projects of applied research in the field of biodiversity with the aim to receive up-to-date information needed for decision-making	At least 5 projects a year from 2018	2018	Outcome of the implemented projects	ME in cooperation with CRDI and TA CR
	System of creation and updating of plans for SPA care based strictly on existing data of the current state with sufficient specifications of the objects of care	Amendments to the relevant Regulation	2020	Creation and updating of care plans carried out according to the new procedure	ME

OBJECTIVE 4.2

Ecosystem Services

Photo: L. Vlasáková

The processes of national, regional and local integrated assessment of the state and trends of ecosystems, including ecosystem services, therefore the benefits provided by ecosystems to human society, are in many countries at the moment. Their aim is to provide a basis for decision-making in the field of the conservation of biodiversity (its care and the sustainable use of its components) and a wide range of ecosystem functions. Evaluation of ecosystems and their services within each country represents a relatively complex process that uses experts and stakeholders from different disciplines and sectors of society.

The Strategic Plan and the Aichi Targets to 2020 of the Convention on Biological Diversity (CBD) provide in the Strategic Goal 2 for the inclusion of the values of biodiversity into the national accounting and reporting by 2020 at the latest. According to the Strategic Goal 14, the ecosystems that provide basic services, including water-related services, and contribute to the health and quality of human life, shall be reclaimed and conserved by 2020.

At the same time, the above-mentioned activities shall contribute to the mapping of ecosystem services within the Member States in the follow-up to the process of the MAES European Commission, and also to the integration of ecosystem services in national accounts in association with the development of the System of Environmental Economic Accounting – Experimental Ecosystem Accounting. National evaluation of ecosystems also fits into The Economics of Ecosystems and Biodiversity (TEEB) including national applications.

CURRENT CONDITIONS

In the Czech Republic there are various comprehensive departmental and sectoral reviews of biodiversity, the state of ecosystems and the requirement of society on their use, including reviews from the perspective of nature conservation, the state of forest, water or agriculture.

At the moment, it is possible to link the process of national reviews to the, national IPBES and TEEB evaluations or the MAES mapping ecosystems. In the framework of the Ecosystem Services Partnership (ESP), a national platform for ecosystem services for the sharing of experience with approaches to the evaluation of the services of ecosystems (communities of practices) may be established. The aim of the national evaluation of ecosystem services is to bring information relevant for effective management of ecosystems and their conservation and reclamation.

There were a number of pilot studies and projects on the evaluation of ecosystem services in the Czech Republic. So far, however, the process of the national evaluation of the ecosystem services that would lead to the creation of a universally accepted, consistent and scientifically based information on the state, changes and development trends of ecosystems and the services they provide has not started yet. There is also no capacity to start the process of a national evaluation of ecosystems. The evaluation will provide a solid information and data base for the use of knowledge about the state, changes and development trends of ecosystems and their harm for decision-making, inter alia, in the state administration and local governments It should also verify or create a space for the preparation and use of scientifically based instruments (scenarios, models, toolkits, multivariate statistical procedures, and other approaches for uncertainty reduction) to support decision-making and strategic direction of conservation and sustainable use of ecosystems.

The process of national evaluation of ecosystems should have a clearly defined scope of the structure by the ME Coordinator and include all stakeholders including relevant government departments and sectors. There is sufficient experience with an integrated evaluation in some European countries and in the USA. The continuity of other steps leading to the fulfilment of each of the conclusions of the evaluation and their political prospects is also important. It is also assumed that there will be certain response and contribution to the scientific community.

The centre of the tasks is associated with the national evaluation of ecosystem services in the period 2016-2020. Following its completion in 2020, an implementation plan and next steps for the use of the outputs of the national evaluation of the ecosystem services shall be established.

PRESSURES/THREATS

PRESSURES	EVALUATION
The lack of information about the state of ecosystem services	Currently provided information is not available in a usable form for effective decision-making.
Inadequate use of available instruments for the evaluation of ecosystem services	Available instruments for assessment, scenarios and simulation of ecosystem services to support the decision-making are currently not being used.

THREATS	EVALUATION
Failure to comply with the strategic commitments for CBD and the EU	Without the integration of current knowledge, supplemented by using innovative available approaches and instruments, failure to comply with the commitments in the area of risk assessment of ecosystem services and their inclusion in national accounts may occur.
Failure to start the process of national evaluation as „multi-expert" and „multi-stakeholder" process	The national evaluation is the process of a specific structure and progress. As such it cannot be entrusted to a single institution, but it should meet the requirements for an integrated assessment with a clear control structure and sufficiently transparent progress.
The lack of involvement of relevant stakeholders in the process	Key actors and relevant stakeholders should be involved in the process of national evaluation. This applies also to traditional sectors such as agriculture, forestry and water management, but also to sectors such as finance or statistics.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
4.2.1 Start the Process of Valuation of Ecosystems and Bring it into Practice	The processing of the final methodology of valuation of ecosystems	Ecosystem valuation methodology	2018	ME website	ME
4.2.2 Establish Evaluation of Ecosystem Services at the Level of the Czech Republic	National integrated evaluation of ecosystems including ecosystem services	Final version of the national evaluation report	2020	Publication of the national evaluation	ME
4.2.3 Introduce the National Evaluation of the Ecosystem Services into Practice	Inclusion of the evaluation of ecosystem services into the strategic planning	Instruments of strategic planning	2022	Methodical documents	ME in cooperation with the MRD and MF

OBJECTIVE 4.3

International Cooperation

Discharge of the antelope Derby in Bandia Reserve, Senegal, photo: Derbianus Conservation

International cooperation in the field of biodiversity protection can be divided into three fundamental areas: global, European (across the whole Europe and within the EU) and cross-border. The Czech Republic is a Party to all major multilateral international treaties on the nature conservation and a member of a number of international intergovernmental organisations, such as the UN professional institutions and programmes, The Food and Agriculture Organisation of the United Nations , the FAO, The United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP), the Council of Europe or the Organisation for Economic Cooperation and Development (OECD). Within the EU, the Czech Republic is bound by the law and the EU Biodiversity Strategy; the Czech Republic also established an intensive cooperation with neighbouring countries, resulting in several cross-border agreements in the area of nature and landscape protection and the care of biological diversity. The general objective of cooperation at the international level is the fulfilment of the commitments that are in the framework of the multilateral international treaties adopted; the specific objective is to support foreign activities of the Czech Republic, which contribute to the protection and conservation of biodiversity, in particular in the developing countries. The main purpose of cross-border cooperation with the neighbouring countries remains to ensure appropriate follow-up to the measures implemented in the field of nature conservation in the specific countries at the national level.

The most important international instrument that addresses the conservation of biodiversity on a global scale is the Convention on Biological Diversity (CBD). The Czech Republic has been a Party of the CBD since 1993. In the framework of the CBD, thematic programmes aimed at the conservation and sustainable use of the biodiversity of the basic types of ecosystems (e.g. forest, marine, coastal and inland water, agricultural or mountain) have been gradually accepted and addressed as well as cross-section activities, concerning to a different extent basic types of ecosystems mentioned, such as the issue of biodiversity in the context of climate change, ecosystem approach, indicators and monitoring, biodiversity, access to genetic resources and sharing of benefits arising from their utilisation, including the contemporary biotechnology techniques, protected areas, Plant Conservation Strategy, invasive alien species or Resource Mobilisation Strategy for the Conservation of Biological Diversity. At present, the Parties to the CBD focus on pursuing the Strategic Plan for the Period 2011-2020 and its so-called 20 Aichi Targets. The Czech Republic is also a Party to all the multilateral international conventions relating to biodiversity at varying degrees, namely, the Convention on Wetlands of international importance especially as

waterfowl habitats (The Ramsar Convention), the Convention on the Conservation of European Wildlife and Natural Habitats (The Bern Convention), the Convention on the Conservation of Migratory Species of Wild Animals (CMS, The Bonn Convention) and in the framework of regional agreements and memoranda (AEWA - the African-Eurasian Migratory Waterbird Agreement, EUROBATS Agreement on the Conservation of Populations of European Bats ,The Memorandum of Understanding (MoU) on the Conservation and Management of Middle-European Populations of the Great Bustard, The CMS Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia , etc.), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, the Washington Convention), the Convention concerning the Protection of the World Cultural and Natural Heritage (UNESCO Paris Convention), the Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention) or the European Convention on landscape. In the context of cross-border cooperation with the neighbouring countries, the Czech Republic has concluded an agreement in the field of environmental protection with all neighbouring countries.

CURRENT CONDITIONS

In early 1990s, the Czech Republic became a recipient of financial and professional assistance from abroad, aimed at the improvement of the state of the environment. It usually concerned projects, training courses, development of methodologies and the dissemination of experience that provided the States of the European Communities, the USA and other economically advanced countries, international non-governmental organisations, private funds or foundations. With the accession of the Czech Republic to the OECD and, eventually, the EU and in relation to the economic development of the country, however, the position of the Czech Republic has changed the status of the beneficiary of the given help, and it became its provider (donor) with a focus on developing and post-communist countries. In this context, the Czech Republic has established commitments, how many % of gross national income (GNI) should be set aside for international development cooperation (IDC). In the context of the CBD were adopted also binding decisions obliging the developed countries to the appropriate official assistance to developing countries in the field of the conservation of biodiversity: specifically, the Decision XI/4 COP of the CBD, which commits the economically developed countries to a doubling of all financial support for the conservation of biodiversity in developing countries. In the area of international development cooperation, the Government of the Czech Republic approved the concept of foreign development cooperation of the Czech Republic for the period 2010 – 2017, which, inter alia, sets the priority of the development assistance in the given period, including a reference to the CBD Strategic Plan and Aichi, which should support the implementation of projects in the field of the conservation of biodiversity in the target countries. From the point of view of the conservation of biodiversity, and in context with the abovementioned commitment, it is essential that this issue was also taken into consideration in the upcoming IDC Concept for the following period.

There have been agreements concluded in the area of cross-border cooperation as well, respectively, the Declaration on cooperation between the ME CR and the Federal States of Saxony and Bavaria, which ensure a regular expert meetings and the exchange of information in the field of nature conservation. More intensive cooperation in the field of biodiversity conservation is also with Slovakia and Austria, where joint selected projects funded by the EU LIFE Programme are implemented. Smaller regional multilateral agreements, specifically, e.g. The Carpathian Convention, which provides a platform for mutual cooperation in the field of nature conservation and not only in this area at all levels (state administration, local government, the voluntary sector) have an important role in cross-border cooperation.

The Czech Republic is also involved in the activities associated with the creation of measures to conserve biodiversity through its membership in international organisations.

E.g. The Global Environmental Fund (GEF) prepared for the years 2014-2017 on projects in the area of biodiversity 1.3 million USD, which makes the historical maximum. The biodiversity also covers the activities of several OECD working groups dedicated to specific vocational issues. The Czech Republic is also a member of the International Union for Conservation of Nature (IUCN), the most prominent non-governmental organisation with a global reach, bringing together in a unique partnership, and the institutions from both the governmental and non-governmental sector of most countries of the world.

Current evaluation of international cooperation:

- Number of projects in the framework of cross-border cooperation
- Monitoring of costs of international biodiversity protection (within the CBD reporting)

PRESSURES/THREATS

PRESSURES	EVALUATION
Lack of support in the framework of international development cooperation	Projects focused on other areas than biodiversity are in the concept of the foreign development cooperation within the environmental sector given preference in the long-term, taking into account existing capacities and comparative advantages, experience, the protection of biodiversity is not within the environmental sector sufficiently taken into account.
Limited capacity of human resources within the State administration	Inadequate human resources capacity in the respective state institutions (ME, MFA) do not allow an effective use of all available financial resources and potential in the field of international conservation of biodiversity, and also limit the involvement of Czech mediation experts and companies in the implementation of development projects and programmes.

THREATS	EVALUATION
Low public awareness of the biodiversity protection at the global level	The generally low public awareness of the importance of biodiversity in the context of sustainable development is the cause of passive support of negative effects on biodiversity, e.g. in the form of demand/consumption of products containing soya or Palm oil, their production has resulted in a dramatic loss of native tropical rain forests and biodiversity in the places where it is the world's highest.

COMPONENT OBJECTIVES AND MEASURES

COMPONENT OBJECTIVE	MEASURE	INDICATOR	DEADLINE	VERIFICATION SOURCES	RESPONSIBILITY
4.3.1 Emphasis on Support of the Biodiversity within the Environmental Sector in the Implementation of the International Development Cooperation	Integration of the issue of the conservation of biodiversity in the updated version of the Concept of the Czech International Development Cooperation	The increase in the number of projects and the volume of funds reported in the context of reporting as the RIO marker 2 for biodiversity by 50%	2020	The concept of international development cooperation, the reports on the conservation of biodiversity, CBD, the Monterrey questionnaire, OECD database	ME in cooperation with MFA
4.3.2 Mediate Contacts with Local Partners for the Implementation of Projects through the Relevant Authorities in the Czech Republic	The number of projects abroad aimed at biodiversity conservation (see component objective 4.3.1), Creation of a Contact Database	The continuous increase of projects abroad aimed at biodiversity conservation (see component objective 4.3.1), Contact Database	2025	Reports on the costs of the conservation of biodiversity, CBD, the Monterrey questionnaire, OECD database, contacts database available at the ME and MFA	MFA in cooperation with the ME
4.3.3 Actively Promote Joint cross-border Projects	Continuation of the projects implemented under the LIFE + Programme and support for the financing of new cross-border or multilateral projects (e.g. within the Carpathian Convention)	The continuous increase in biodiversity conservation projects implemented in cooperation with neighbouring countries within of the Carpathian Convention	2025	Register of projects	ME
4.3.4 Engage in International Activities in the Field of Research and the Conservation of Genetic Biodiversity	Involvement in international activities in the field of research and the conservation of genetic diversity, introduction and encouraging the use of the most modern molecular-genetic technologies	Participation in international activities (e.g. within the H2020 and subsequent instruments)	2025	Relevant international programmes and activities	ME

SOURCES OF FINANCING OF THE STRATEGY OBJECTIVES

	Funding sources of component objectives:	National Biodiversity Strategy																		
		Priority 1 Society Recognising the Value of Natural Resources					**Priority 2 Biodiversity Flourishing in the Long Term and Protection of Natural Processes**						**Priority 3 Environmentally Friendly Use of Natural Resources**						**Priority 4 Strategic Planning and Policy**		
		1.1 Society Recognising the Value of Natural Resources	1.2 Public Administration	1.3 Private Sector	1.4 Tourism	1.5 Economic Instruments and Financial Support	2.1 Genetic Diversity	2.2 Species	2.3 Invasive Alien Species (the IAS)	2.4 Natural Habitats	2.5 Landscape	2.6 Settlements	3.1 Agricultural Landscape	3.2 Forest Ecosystems	3.3 Water Ecosystems	3.4 Soil and Mineral Resources	3.5 Ecosystem Maintenance and Restoration	3.6 Sustainable Utilisation of Genetic Resources	4.1 Providing up-to-date and relevant information	4.2 Ecosystem Services	4.3 International Cooperation
ME	Budget allocation 315 (ME)	xxx	xxx	xx	xx	xxxx	xxx	xxx	xxx	xxxx	xx	xx	x	x	xx	x	xx	x	xxx	xxx	xx
ME	(ESIF) OPE - Priority Axis 1 - Improvement of Water Quality and Reduction of Flood Risks					x				x	x				xxx		x				
ME	(ESIF) OPE - Priority Axis 3 - Waste and material flows, ecological burdens and risks					x				xx	xx					x					
ME	(ESIF) OPE - Priority Axis 4 - Nature and landscape protection and care				x	xxx		xx	xxx	xxxx	xx	xxx		x	x	x	xx				
MA	Budget allocation 329 (MA)	x				xx		x	xx	x	xx	x	xx	xx	xx	x	x	x	xx		
MA	(ESIF) RDP - Priority 4 – Restoring, preserving and enhancing ecosystems in agriculture and forestry	x				xx			xx	xx	xxx	x	xxx	xxx	xxx	x	x				
MA	(ESIF) PRV - Priority 5 – Resource efficiency and shift to low carbon and climate resilience economy in agriculture, food and forestry sectors	x				xx				xx	xxx		xxx	xxx	xxx						

(sources of financing of the Strategy Objectives are marked in the Table with "x" to "xxxx" according to the potential of their use with regard to the number of component objectives)

		National Biodiversity Strategy																		
		Priority 1 Society Recognising the Value of Natural Resources					**Priority 2 Biodiversity Flourishing in the Long Term and Protection of Natural Processes**						**Priority 3 Environmentally Friendly Use of Natural Resources**						**Priority 4 Strategic Planning and Policy**		
		1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5	2.6	3.1	3.2	3.3	3.4	3.5	3.6	4.1	4.2	4.3
MA	(ESIF) OP F – Union Priority 2 and 3 – Supporting environmentally sustainable, resource-efficient, innovative, competitive and knowledge-based aquaculture; Supporting the implementation of common fisheries policy														xx						
MRD	Budget allocation 317 (MRD)				xxx						x								x	x	
MRD	(ESIF) IROP - Priority Axis 3 - Good territorial administration and improvement in the effectiveness of public institutions			x	x						x										
MRD	(ESIF) IROP - Priority Axis 4 - Community-led local development											xx									
MD	Budget allocation 327 (MT)										x										
MD	(ESIF) OP T - Priority Axis 1 - Infrastructure for railway and other sustainable transport										xx										
MD	(ESIF) OP T - Priority Axis 2 - Road infrastructure in the TEN-T network and public infrastructure for clean mobility										xx										
MD	(ESIF) OP T - Priority Axis 3 - Road infrastructure outside the TEN-T network										xx										
MPO	Budget allocation 307 (MIT)			x												x	xxx				

(sources of financing of the Strategy Objectives are marked in the Table with "x" to "xxxx" according to the potential of their use with regard to the number of component objectives)

		National Biodiversity Strategy																		
		Priority 1 Society Recognising the Value of Natural Resources					**Priority 2 Biodiversity Flourishing in the Long Term and Protection of Natural Processes**						**Priority 3 Environmentally Friendly Use of Natural Resources**						**Priority 4 Strategic Planning and Policy**		
		1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5	2.6	3.1	3.2	3.3	3.4	3.5	3.6	4.1	4.2	4.3
MIT	(ESIF) OP EIC - Priority Axis 3 – Efficient energy management, development of energy infrastructure and renewable energy sources, support for the introduction of new technologies in the management of energy and secondary raw materials			xx												x	xxx				
MEYS	Budget allocation 333 (MEYS)	x	x																		
MEYS	(ESIF) OP RDE - Priority Axis 1 – Strengthening capacities for high-quality research																		x		
MEYS	(ESIF) OP RDE - Priority Axis 2 – Development of universities and human resources for research and development	xxx	xx																		
MEYS	(ESIF) OP RDE - Priority Axis 3 – Equal access to high-quality pre-school, primary and secondary education	xxx																			
MF	Budget allocation MF 312 (MF)																			x	
MFA	Budget allocation 306 (MFA)																				xx

(sources of financing of the Strategy Objectives are marked in the Table with "x" to "xxxx" according to the potential of their use with regard to the number of component objectives)

European Structural and Investment Funds (ESIF) OPE – Operational Programme Environment;
RDP - Rural Development Programme;
OP F – Operational Programme Fisheries;
IROP – Integrated Regional Operational Programme;
OP T – Operational Programme Transport;
OP EIC – Operational Programme Enterprise and Innovation for Competitiveness;
OP RDE - Operational Programme Research, Development and Education

CONFORMITY OF THE STRATEGY OBJECTIVES AND MEASURES WITH THE STATE ENVIRONMENTAL POLICY AND WITH OTHER SECTORAL POLICIES

CC		**Strategy for Sustainable Development of the Czech Republic** Priority Axis 3 - Spatial development and 4 - Landscape, ecosystems and biodiversity																		
ME		**State Environmental Policy of the Czech Republic 2012-2020** Priorities: 1.1 Ensure Water Protection, 1.3 Ensure and Sustain Use of Soil and Rock Environment, 3.1. Protection and Strengthening of Ecological Functions of the Landscape, 3.2 Conservation of Natural Landscape Values 3.3 Improve the Quality of Environment in the Settlements, 4.1 Risk Prevention																		
ME		**National Biodiversity Strategy**																		
		Priority 1 **Society Recognising the Value of Natural Resources**					**Priority 2** **Biodiversity Flourishing in the Long Term and Protection of Natural Processes**						**Priority 3** **Environmentally Friendly Use of Natural Resources**						**Priority 4** **Strategic Planning and Policy**		
		1.1 Society Recognising the Value of Natural Resources	1.2 Public Administration	1.3 Private Sector	1.4 Tourism	1.5 Economic Instruments and Financial Support	2.1 Genetic Diversity	2.2 Species	2.3 Invasive Alien Species (the IAS)	2.4 Natural Habitats	2.5 Landscape	2.6 Settlements	3.1 Agricultural Landscape	3.2 Forest Ecosystems	3.3 Water Ecosystems	3.4 Soil and Mineral Resources	3.5 Ecosystem Maintenance and Restoration	3.6 Sustainable Utilisation of Genetic Resources	4.1 Providing Up-to-date and Relevant information	4.2 Ecosystem Services	4.3 International Cooperation
ME	Strategy for Climate Change Adaptation in the Conditions of the CR				x		x	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx			
ME	The concept of environmental security							x	xx	x	xxx	xx	x	x	xx	x	xxx				
ME	Environmental Education and Awareness Strategy	xxx	xxx																		
	MA21 Concept	x	xx								xx	xx				x	xx				

(association of the Strategy Objectives with other sectoral concepts and strategies in the Table marked with „x" from the weakest to the strongest „xxx")

		National Biodiversity Strategy																		
		Priority 1 Society Recognising the Value of Natural Resources					**Priority 2 Biodiversity Flourishing in the Long Term and Protection of Natural Processes**						**Priority 3 Environmentally Friendly Use of Natural Resources**						**Priority 4 Strategic Planning and Policy**		
		1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5	2.6	3.1	3.2	3.3	3.4	3.5	3.6	4.1	4.2	4.3
MA	River Basin Management Plans														xxx						
MA	Growth Strategy – the Czech agriculture and food industry in the framework of the EU Common Agricultural Policy after 2013			x					x				xxx		x	x	x	xxx			
MA	National Program on Conservation and Reproduction of Forest Tree Species Gene Pool 2014-2018													xxx							
MA	National Forestry Programme to 2013	x	x	x										xxx							
MA	Action Plan for the Development of Organic Farming in the years 2011-2015												xx								
MA	Biomass Action Plan for the Czech Republic for the period 2012 - 2020							x	x			x	x								
MA	Multiannual National Strategic Plan for Aquaculture (2014)								xx				xx		xx						
MA	The principles of State Forestry Policies (2012)													xxx							
MRD	The Concept of the State Tourism Policy				xxx					x									x		
MRD	Regional Development Strategy of the Czech Republic		x		x				xx		xxx	xx			x		xx				
MRD	Spatial Development Policy of the Czech Republic, Act. No. 1 (2015)		x		x						xxx	xx				x	x				
MRD	Architecture and Building Culture Policy of the Czech Republic (2015)										x	xxx									
MT	The Transport Policy of the Czech Republic for 2014–2020										x										
MIT	The Raw Material Policy of the Czech Republic in the Field of Mineral Materials and Their Resources									x						x					
MIT	NAP for the Corporate Social Responsibility in the Czech Republic			xx																	
MIT	National Brownfield Regeneration Strategy		x	x							xx	xx				xx	xx				

(association of the Strategy Objectives with other sectoral concepts and strategies in the Table marked with „x" from the weakest to the strongest „xxx")

List of Abbreviations

ABS – Access and Benefit Sharing
The Aichi Targets — a total of 20 targets of the CBD Strategic Plan established on 1the tenth meeting of the Conference of the Parties to the CBD in the Japanese city of Nagoya in Aichi Prefecture in 2010
NCA CR – Agency for Nature Conservation and Landscape Protection of the Czech Republic
AS CR – Academy of Sciences of the Czech Republic
BioLog – the project of civil science focused on the species monitoring (administrator NCA CR)
BioLib – species monitoring database
CAP – Common Agriculture Policy
CBD – Convention on Biological Diversity
CFP – Common Fishery Policy
CITES – Convention on International Trade with Endangered Species of Wild Fauna and Flora
CMS – Convention on the Conservation of Migratory Species of Wild Animals
CSR – Corporate Social Responsibility
CEI – Czech Environmental Inspectorate
WWTP – Wastewater Treatment Plan
CFU – Czech Fishing Union
GAEC – Good Agricultural and Environmental Conditions
EBC – European Brewery Convention
ECCO – European Culture Collection Organisation
ECPGR – The European Cooperative Programme for Plant Genetic Resources
EEA – European Economic Area
EIA – Environmental Impact Assessment
EC – European Commission
ECT – Environmental Consulting
ERFP – European Regional Focal Point for Animal Genetic Resources
ES – Ecosystem services
ESIF – European Structural and Investment Funds
EU – European Union
EUROPARC – Association of European National Parks
EEPA – Environmental Education and Public Awareness
FAO – Food and Agriculture Organization
FEMS – Federation of European Microbiological Societies
GBIF – Global Biodiversity Information Facility
GEF – Global Environmental Facility
GGBN – Gene Banks
GMO – Genetically Modified Organisms
GNI – Gross National Income

HNV – Agricultural systems with high nature value
PLA – Protected Landscape Area
PA – Protected Areas, areas and bird areas of EU importance
IAS – Invasive Alien Species
INSPIRE – EU Directive on Infrastructure for Spatial Information in the European Community
IPBES – The Intergovernmental Science–Policy Platform on Biodiversity and Ecosystem Services
IUCN – International Union for Conservation of Nature
ITPGRFA – The International Treaty on Plant Genetic Resources for Food and Agriculture
KRNAP – The Krkonoše Mountains National Park
LFA – Agriculturally Less Favoured Areas
LIFE – EU's financial instrument supporting environmental and nature conservation
LPIS – Geographic Information System (GIS), which is made up primarily of the records of the use of agricultural land
MAES – Mapping and Assessing of Ecosystem Services
MT – Ministry of Transport
MK – Ministry of Culture
MRD – Ministry for Regional Development
MD – Ministry of Defence
MFU – Moravian Fishing Union
PS – Pre–schools
MIT – Ministry of Industry and Trade
MEYS – Ministry of Education, Youth and Sports
MA – Ministry of Agriculture
MH – Ministry of Health
MFA – Ministry of Foreign Affairs
ME – Ministry of Environment
Natura 2000 Network – a system of protected areas established under the European Community legislation (Birds and Habitats Directives)
NČI – National Indicators – a system of all central indicators, which are the carriers of information on the implementation of the relevant projects/programmes financed from the EU structural funds.
NDOP – Founding Nature Conservation Database, managed by NCA CR
NIF – National Inventory of Forests of the CR
NFP – National Forestry Programme
NGO – Non–governmental Non-profit Organisations
NP – National park
NNR – National natural reserve
NNM – National natural monument
OECD – Organization for Economic Cooperation and Development
OPE – Operational Programme Environment
UN – United Nations
POPFK – Support of the Recovery of the Natural Features of the Landscape

POP – Persistent Organic Pollutants
NM – Natural Monument
PPCP – Pharmaceutical and Personal Care Products
LCP – Landscape Care Programme
NR – Natural Reserve
RDP – Rural Development Programme
PUPFL – Land Intended for the Performance of the Functions of the Forest
SDP – Spatial Development Plan
RSM – Resource Mobilization Strategy
FGT – Fast Growing Trees
CRDI – Council for Research, Development and Innovation (an advisory body to the Government of the Czech Republic)
CGCSD – Czech Government Council for Sustainable Development
SNCLPP – State Nature Conservation and Landscape Protection Programme
SEF – State Environmental Fund
SEP – State Environmental Policy
HS – High Schools
CAP – Common Agricultural Policy of the European Union
TA CR – Technological Agency of the Czech Republic
TEEB – The Economics of Ecosystems and Biodiversity
UNCCD – United Nations Convention to Combat Desertification
UNDP – United Nations Development Programme
UNEP – United Nations Environment Programme
UNESCO – United Nations Educational Scientific and Cultural Organisation
CISTA – Central Institute for Supervising and Testing in Agriculture
TSES – Territorial System of Ecological Stability
ILF – Important Landscape Feature
RILOG – Silva Tarouca Research Institute for Landscape and Ornamental Gardening
RICP – Research Institute of Crop Production
WFCC – World Federation of Culture Collections
WFD – the EU Water Framework Directive (2000/60/EC)
WWF – World Wildlife Fund
SPS – Specially Protected Species
SPA – Specially Protected Areas – NP, PLA, NNR, NNP, NR and NM
NCA – Act on Nature and Landscape Protection (Act No. 114/1992 Coll., as amended)
ALRR – agricultural land resources
IDC – International Development Cooperation
SDP – Spatial Development Principles

Glossary of terms

The Glossary of Terms presents a selection of terms used in the Biological Diversity Conservation Strategy of the Czech Republic. Most terms were literally taken from Act No. 114/1992 on Nature Conservation and Landscape Protection, as amended later, as well as from the Convention on Biological Diversity. If there are more terms having been used for the same subject, all are included below. On the other hand, common synonyms are given in the glossary. Mark → refers to another term listed in the glossary.

Abiotic – Non-living, applied to the physical and chemical aspect of an → organism's → environment.
Access and benefit sharing - one of the three objectives of the → Convention on Biological Diversity. It is the fair and equitable sharing of the benefits arising out of the utilization of → genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant → technologies, taking into account all rights over those resources and to technologies, and by appropriate funding. The CBD also has several articles (especially Article 15) regarding international aspects of access to genetic resources. The access and benefit s haring is implemented through → the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization.
Acidification – Change in natural chemical balance caused by an increase in the concentration of acidic elements. Acid precipitation has a lower pH than normal as a result of acid-forming precursor molecules introduced into the atmosphere by human activities.
Action plan/recovery programme – a set of various activities aiming at conservation of → the Specially Protected Species and at improving its conservation status. It is an important → species protection tool.
Adaptative management – is a systematic process for continually improving → policies and practices by learning from the outcomes of operational programmes. It is a structured, iterative process of optimal decision making in the face of uncertainty. In other words, it is a quasi-experiment, flexible „learning by doing. A part of → ecosystem approach.
Agri-environmental climate schemes - a key element for the integration of environmental and climate change mitigation and adaptation concerns into the Common Agricultural Policy in the European Union. They are designed to encourage farmers to protect and enhance → the environment on their farmland and to support climate change mitigation and adaptation by paying them for the provision of → ecosystem services. Farmers commit themselves, for a minimum period of at least five years, to adopt environmentally-friendly farming techniques that go beyond legal obligations. In return, they receive payments that provide compensation for additional costs and income foregone resulting from applying those environmentally friendly farming practices in line with the stipulations of agri-environment contracts. Also known as agri-environmental measures.
Agri-environmental measures – see → Agri-environmental climate schemes
Alien species - A → species, subspecies or lower → taxon, introduced outside its natural past or present → distribution range; includes any part, gametes, seeds, eggs, or other → propagules of such species that might survive and subsequently reproduce.
Alpine zone – a part of mountains above the tree line where is too cold for trees to grow. In the Czech Republic, it was developed in the Krkonoše/Giant Mts., Králický Sněžník Mts. and in the Hrubý Jeseník Mts. only.
Anthropogenic – human caused: describing a phenomenon or condition of the natural world, that results from, or is significantly influenced by human activity. Resulting from or produced by human beings.
Bioinformatics – the use of computers and/or mathematics to analyse complex biological information. It is discipline of using computers to address information problems in the life sciences; it involves, inter alia, the creation of electronic data bases on genomes, protein sequences, etc.
Biocentre – a site or area, usually harbouring high → biological diversity, particularly → species richness and habitat heterogeneity as a part of → ecological network. Within the → Territorial System of Ecological Stability of the Landscape, there are local, regional (=subnational), and supra-regional (national and supranational) biocentres in the Czech Republic. Also known as core areas.

Biodiversity – see → Biological diversity
Biological corridor - a part of the landscape, linear or → stepping stones, connecting two or more → habitats, facilitating the movement/ → dispersal of → organisms between local → populations across the landscape. Biological corridors are elements of → ecological network. Within the → Territorial System of Ecological Stability of the Landscape, there are local, regional (=subnational), and supra-regional (national and supranational) biological corridors in the Czech Republic. Also known as habitat corridor, ecological corridor or migration corridor.
Biological diversity - the variability among living → organisms from all sources including, inter alia, terrestrial, marine and other aquatic → ecosystems and the ecological complexes of which they are a part. It includes diversity within → species, between species and of ecosystems. In other words, it is the variability in and among of biological systems of all the levels and is not a pure sum of system´s elements, but interrelations among them (the holistic approach). Usually, there are three biological diversity levels: → genes, organisms (species), and ecosystems. Some authors also recognize human (cultural) and molecular levels within biological diversity. More recently, attention has been paid to evolutionary aspects of biological diversity. Biological diversity is an overarching hierarchical concept: therefore, it cannot be expressed by a single variable. Thus, it is measured and quantified through various indicators. Also known as biodiversity.
Bird Area – a site/area most suitable, from the point of view of the occurrence, state and levels of their populations, for the protection of the bird species occurring on the Czech Republic´s and specified by the European Union legislation, namely Directive 2009/147/EC on the conservation of wild bird (commonly known as the Birds Directive). As of September 20, 2016, there are 41 Bird Areas in the Czech Republic, covering 0.67 % of the country´s territory.
Biosafety - the application of knowledge, techniques and equipment to prevent personal, laboratory and environmental exposure to potentially infectious agents or biohazards. It includes attitudes, behaviour, techniques and legislation intended to manage, reduce or eliminate risk from biological resources or to biological entities. Techniques include exclusion, mitigation, adaptation, control, and eradication.
Biota – all of the living → organisms that are found in a particular area. A living part of the → ecosystem.
Biotechnology - any → technology that is applied to living → organisms to make them more valuable to people.
Black list - 1. a list of species which have become extinct in a given area, often a part of the → red list. 2. A list of → invasive alien species which should be controlled or eradicated in a certain area and whose import, spreading and releasing into the wild is banned there.
Brownfield – an abandoned industrial or commercial site where expansion or redevelopment is compromised by the possibility that it may be contaminated with hazardous substances from operations on the site.
Carbon sequestration – the process of removing carbon dioxide from the atmospheric pool and making it less accessible or inaccessible to carbon-cycling process.
Cartagena Protocol on Biosafety - an international agreement governing the movements of living modified organisms (LMOs) resulting from modern → biotechnology from one country to another. It was adopted on 29 January 2000 as a supplementary agreement to the → Convention on Biological Diversity and entered into force on 11 September 2003. As of September 20, 2016 there are 170 Parties to the Cartagena Protocol.
Clade – a monophyletic group made up of ancestor and all of its descendants.
Climate – sensu stricto, the average weather, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organization. The relevant quantities are most often surface variables such as temperature, precipitation and wind. Sensu lato, is the highly complex system consisting of five major components: the atmosphere, the hydrosphere, the cryosphere, the land surface and the biosphere, and the interactions between them. The climate system evolves in time under the influence of its own internal dynamics and because external drivers such as volcanic eruptions, solar variations and anthropogenic factors such as the changing composition of the atmosphere and land-use changes.
Climate change - a change in the state of the → climate that can be identified (e.g. by using statistical tests) by changes in the mean and/

or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external drivers, or to persistent anthropogenic changes in the composition of the atmosphere or in land use.

Community – an assemblage of → species found together in a specific → habitat at a certain time, interacting with each other in this area.

Convention on Biological Diversity - an international legally binding United Nations treaty. It has three main goals: the conservation of → biological diversity, → the sustainable use of the components of biodiversity, and the fair and equitable sharing of benefits arising from the use of → genetic resources. By Parties, it is implemented through national biodiversity strategies and action plans, using thematic programmes of work (they cover biological diversity in main ecosystem or → land use types, e.g. forest, marine and coastal or inland water ones) and cross-cutting issues passing through thematic programmes of work (e.g., → ecosystem approach, → access and benefit sharing, or biological diversity → monitoring, assessment and indicators). It has developed and → the Cartagena Protocol on Biosafety and the → Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization. As of September 20, 2016, there are 196 Parties to the CBD.

Core area – see → Biocentre

Cropland – land used for growing crops, including arable land (land under temporary crops or temporarily fallow) and permanent crops.

Dispersal – movement → of organisms through the → landscape, often among local → populations in a larger population.

Distribution range – the region within which a → species or a → habitat occurs.

Disturbance – a short term effect that disrupts → populations, → communities, or → ecosystems by changing the → environment. An episodic event that results in a sustained disruption of an ecosystem´s structure and → functions, generally with effects that last for an extended time. This may be a physical disturbance, e.g. fire or flood, a biogenic disturbance (e.g. colonisation by herbivores), or → an anthropogenic → disturbance, e.g. deforestation. Nowadays, they are considered as a part of → nature, often having positive effects on → biological diversity.

Ecological barrier – a natural or artificial feature that restricts movement and → dispersal of → organisms across the → landscape.

Ecological corridor – see → Biological corridor

Ecological integrity – see → Ecosystem integrity

Ecological network - a system of representative core areas (→ biocentres), → biological corridors and buffer zones designed and managed in such a way as to preserve → biological diversity, maintain or restore → ecosystem services and allow a → sustainable use of → natural resources through interconnectivity of its physical elements within → the landscape and existing social/institutional structures.

Ecological restoration – the recovery of a damaged → ecosystem, either naturally or as a result of management that is designed to re-establish its structure and → functions. It is the process of re-establishing, to as near its natural condition as possible, the → structure, → functions, and composition of an ecosystem. In other words, it is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. An ecosystem has recovered when it contains sufficient biotic and → abiotic resources to continue its development without further assistance or subsidy. It would sustain itself structurally and functionally, demonstrate resilience to normal ranges of environmental stress and disturbance, and interact with contiguous ecosystems in terms of biotic and → abiotic flows and cultural interactions. Ecological restoration is not a → nature conservation tool, but a response to inappropriate human activities.

Ecological stability – an ability of a certain → ecosystem to become resistant and resilient against changes caused by external factors through → disturbances and to maintain its features, patterns and → functions.

Ecosystem – a natural unit consisting of all organisms in a given area (→ biota), interacting with → abiotic → environment. It is a functional system of biotic and → abiotic components of the environment, which are mutually connected by exchange of matter, energy flow, and transfer of information, and which influence each other and develop in a certain space and time.

Ecosystem accounting - a coherent and integrated approach to the assessment of → the environment through the measurement of → ecosystems, and measurement of the flows of → services from ecosystems into economic and other human activity. It is a relatively

new and emerging field dealing with the integration of complex biophysical data, use of those data to track changes in ecosystems and linkage of the changes to economic and other human activity. Considering the increasing demand for statistics on ecosystems within analytical and policy frameworks on environmental sustainability, human well-being and economic growth and development, advancing this emerging field of statistics has become increasingly urgent.

Ecosystem approach - A strategy for the integrated management of land, water and living resources that promotes → conservation and → sustainable use in an equitable way. It is the comprehensive integrated management of human activities based on the best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of ecosystems, thereby achieving sustainable use of ecosystem services and maintenance of ecosystem integrity. A leading principle for implementing the → Convention on Biological Diversity.

Ecosystem function – internal features, patterns and characteristics related to conditions and processes, e.g. primary productivity, food web or biogeochemical cycles. It includes biological, geochemical and physical → processes and components
that take place or occur within a certain → ecosystem. In other words, ecosystem function is process, product or outcome arising from the biogeochemical activities of living things as they absorb, transform, excrete and exchange materials and energy, delivered across the boundary of some nominally bounded system.

Ecosystem functioning – a basic → ecosystem process contributing to provisioning humans with → ecosystem services, e.g. energy flow and nutrient cycling. They include interactions and exchanges between → organisms and their non-living → environment, within a nominally bounded system, involving but not limited to transformations of material or energy, gene flow and changes in gene frequency, population demography and dynamics, and behaviour. The interactions are typically subject to feedback and exhibit non-linear relationships with drivers and with the processes that they influence.

Ecosystem integrity - the ability of a certain → ecosystem to maintain its organisation in the face of changing environmental conditions and to function healthily, continue to provide → ecosystem services and maintain → biological diversity. It is the state where in an ecosystem, → structure and functional relations maintained are similar to those when natural biodiversity has been present. In other words, it describes the ecosystem complexity. The integrity of an ecosystem does not only reflect a single characteristic of an ecosystem and therefore encompasses a wide set of criteria. Thus, ecosystem integrity is measured by various indicators. Also known as ecological integrity.

Ecosystem process – the biogeochemical flows of energy, matter (including nutrients) and information within and among ecosystems.

Ecosystem services – the conditions and → processes by which → ecosystems sustain and support human well-being. These are benefits people obtain from ecosystems. They include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and other nonmaterial benefits.

Ecosystem structure - the biophysical architecture of → an ecosystem. The composition of → species making up the architecture may vary.

Ecotone – a transitional area between two adjacent → communities, → habitats and → ecosystems. It is boundary or border zone which contains → species from both entities. It is a boundary or line of transition between neighbouring ecosystems. In other words, it is a habitat or ecosystem that characterises the transition zone between distinct ecosystems.

Endemic – a → taxon confined to particular region, thus often having a comparatively restricted → distribution range.

Environment – whatever surrounds and interacts with or otherwise affect a → population, → organism, or a cell. The totality of all the external factors, conditions and influences affecting the life, development and survival of an organism.

Environmental education – formal and informal activities that are designed to promote people´s understanding of, appreciation, and care of nature and the environment.

European habitat – a → natural habitat in the European territory of the European Union Member States, of the types which are in danger of disappearance in their natural → distribution range or have a small natural distribution range due to their decline or due to their natural features, or present exceptional examples of typical characteristics of one or more of the biogeographical regions, and which are set

out by the European Union legislation, namely Directive 92/43/ EEC on the conservation of natural habitats and of wild fauna and flora (commonly known as the Habitats Directive).

Eutrophication - the increase in additions of nutrients to freshwater, marine or terrestrial → ecosystems. In aquatic ecosystems it leads to increases in plant, algal and cyanophyte growth (biological production) and often to undesirable changes in ecosystem → structure and → functions.

Ex-situ conservation - the → conservation of components of → biological diversity outside their natural → habitats.

Food web – the complete set of food links between → species in a → community.

Gene – a unit of heredity, the unit of genetic function which carries the information for a polypeptide or RNA. It is a DNA sequence on a chromosome that codes for a specific protein.

Genetic diversity - the variation in the amount of genetic information within and among individuals of a → population, a → species, or a → community.

Genetic material - any material of plant, animal, microbial or other origin containing functional units of heredity.

Genetic resources – → genetic material of plants, animals, micro-organisms and other → organisms that is of actual or potential value as a resource for humans. Examples include cultivars and breeds, landraces and wild relatives of crop plants or domesticated animals.

Genetically modified organism – an organism whose genetic code has been altered by humans. Any organism, with the exception of human beings, in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination.

Grassland – short-structure vegetation dominated by grasses.

Green infrastructure - a system/network of open space, consisting of natural, → semi-natural and man-made structures that provide directly or indirectly to human society → ecosystem services and support and improve → ecosystem processes and → functions. Therefore, it a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services. It incorporates green spaces (or blue if aquatic ecosystems are concerned) and other physical features in terrestrial (including coastal) and marine areas. On land, GI is also present in rural and urban settings. Green infrastructure links a protected area network, an → ecological network respectively, with the unprotected, non-reserved landscape including various green areas in human settlements, from green roofs and walls up to large-size urban parks. The GI concept emphasizes the importance of ensuring the provision of ecosystem services for society and the value of functionally and spatially connected, healthy → ecosystems, by improving their functional and spatial → connectivity.

Habitat – the particular → environment in which an individual, → population, → species or → community/assemblage lives. In other words, the place or type of site where → an organism, population, species or community/assemblage naturally occurs. It is a complex of all → abiotic and biotic factors which, mutually effecting, form the environment of a certain individual, species, population, or community. A habitat is such local environment which meets the requirements characteristic of plant, animal and other species.

Habitat corridor – see → Biological corridor

Habitat fragmentation – a process whereby a continuous area of → habitat is reduced in area and/or divided into two or more fragments. It is disaggregation of a habitat into more or less isolated patches that are scattered in a matrix of other habitat types.

In-situ conservation - the → conservation of → ecosystems and natural → habitats and the maintenance and recovery of viable → populations of → species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties.

Invasive alien species – → alien species whose introduction and/or spread outside their natural past or present → distribution range threatens → biological diversity. Invasive alien species occur in all taxonomic groups, including animals, plants, fungi and microorganisms, and can affect all types of ecosystems.

Land consolidation – see → Land replotting

Land cover – a physical state of a land area in terms of its surface features.

Land replotting - land replotting arranges, in accordance with public interest, lands both in spatial and functional manner, combines or splits them, ensures access to them and their use and modifies their boundaries in order to facilitate conditions for their rational

management by land owners. In this context, property rights/land ownership rights to land and related easements are arranged. At the same time, they provide the conditions for improving → the environment, land resource protection and reclamation → /ecological restoration, water management and improvement in → ecological stability at the → landscape level. Results obtained from land replotting are used for update of cadastral/land register operate and as a necessary basis for → land use planning. Also known as land consolidation or reparcelling.

Landscape - a part of the surface of the Earth with a characteristic relief, formed by a complex of functionally interconnected → ecosystems and civilisation elements. It is an Earth´s cover, consisting of natural elements and man-made products.

Landscape connectivity – the ability of a landscape to facilitate the flows of → organisms, energy, or material across → a landscape.

Landscape fragmentation – the breaking up of → the landscape into smaller patches, most often by human activities, or the human introduction of barriers that impede flow of → organisms, energy, and material through the landscape.

Land use – the purpose for which an area of land is being used.

Land-use change – converting an area of land from one → land use to another, usually on purpose.

Land-use plan – a plan which outlines proposed → land use and their distribution in a particular area.

Land-use planning – development of a plan for the use and development of land within the specific boundaries (e.g., municipality, subnational administration units), taking into account existing → land use, land capability and the specific policies and strategic objectives. Also known as physical planning or territorial planning.

Management plan – a statement of how to protect → biological diversity in a particular area, along with methods for implementation. A written that describes the overall guidelines within which an activity or project is organized, administered, and managed to ensure that agreed management objectives are achieved in a timely manner. In the Czech Republic, they are obligatory for → Specially Protected Areas.

Metapopulation - a total → population system that is composed of multiple local populations geographically separated but functionally connected through → dispersal of → organism. It also can be described as a population of populations.

Migration – Sustained directional movement by an animal that takes it out of one → habitat and into another. A part of → dispersal.

Migration corridor – see → Biological corridor

Monitoring – → technologies, procedures, and protocols for collecting, analysing, interpreting, and reporting environmental information including that on model → biological diversity components. More generally, it is the continuous or frequent standardized measurement and observation of the → environment (air, water, land/soil, → biota), often used for warning and control. It provides a time series of data on the state of and changes and trends in the measurable variables as well as baselines against which to evaluate rates and patterns of environmental change, and which can be used to give an early indications of adjustments and possible risk in → nature, → the environment and → biological diversity.

Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization - an international agreement which aims at sharing the benefits arising from the utilization of → genetic resources in a fair and equitable way. It is a protocol to → the Convention on Biological Diversity and it entered into force on 12 October 2014. It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilization of genetic resources. As of September 20, there are 78 Parties to the Nagoya Protocol.

National Biodiversity Strategies and Action Plans - the principal instruments for implementing the → Convention on Biological Diversity at the national level (Article 6). The CBD requires Parties to prepare a national biodiversity strategy (or equivalent instrument) and to ensure that this strategy is mainstreamed into the planning and activities of all those sectors whose activities can have an impact (positive and negative) on → biological diversity.

National Nature Monument - a natural formation of a smaller site/area, particularly a geological or geomorphologic formation, mineral deposit or place of occurrence of rare or endangered → species in fragments of → ecosystems, having national or international environmental, scientific or aesthetic importance, including formations which were formed, besides by nature, also by the activity of man. A category of → Specially Protected Areas. As of September 20, 2016, there are 120 NNMs in the Czech Republic.

National Nature Reserve – a smaller site/area of exceptional natural values, where → ecosystems important and unique at the national

or international scale are bound with natural relief having a typical geological structure. A category of → Specially Protected Area. As of September 20, 2016, there are 107 NNRs in the Czech Republic.

National Park – an extensive area, unique at the national or international scale, a considerable part of which is covered by natural → ecosystems or ecosystems little effected by human activities, where plants, animals, other → organisms and → abiotic → nature are of an exceptional scientific and educational importance. A category of → Specially Protected Areas. There are four National Parks in the Czech Republic (the Krkonoše/Giant Mts., Šumava/Bohemian Forest Mts., Podyjí/Thaya River Basin and the České Švýcarsko/Bohemian Switzerland).

Natura 2000 network – a coherent system of areas with specified level of → conservation being established in the European Union, which enables to maintain natural → habitats and habitats of → species in their natural → distribution range at a favourable conservation status, or optionally, will enable to restore such status. Thus, it is designed to conserve → natural habitats and → wildlife species of the European Union importance. In the Czech Republic, Natura 2000 consists of the → Bird Areas and the → Sites of European Importance, which are contractually protected or protected as → Specially Protected Areas. In the Czech Republic, as of September 20, 2016, there in total are 1,153 Natura 2000 sites, strongly overlapping Specially Protected Areas.

Natural capital – the stock of → natural resources and environmental assets within an area, a country, or the world. It is natural assets in their role of providing natural resource inputs and → ecosystem services for economic production. Natural capital includes land, minerals and fossil fuels, solar energy, water, living → organisms, and the services provided by the interactions of all these elements in → ecosystems.

Natural habitat - a natural or → semi-natural terrestrial or aquatic area, distinguished on the basis of geographic characteristics and characteristics of biotic and → abiotic → nature.

Natural resource – any feature of → nature that is of value for meeting human needs, including → renewable resources (e.g., water, soil, wildlife) and non-renewable resources (e.g., oil, natural gas, coal, or iron ore). They are assets (raw materials) occurring in nature that can be used for economic production or consumption

Nature - a real world surrounding us: it was not created by humans, but humans critically depend on it.

Nature-based tourism - any type of tourism that relies on experiences directly related to natural attractions and includes ecotourism, adventure tourism, extractive tourism, wildlife tourism and nature retreats.

Nature conservation - a range of human activities aiming at maintaining the natural world in a favourable status, i.e. in good conditions, particularly healthy, for a long time. Generally, as a public interest, it is a multi-disciplinary social branch trying to keep nature healthy.

Nature Monument - a natural formation of a smaller area, particularly a geological or geomorphologic formation, deposit of rare minerals or place of occurrence of endangered → species in fragments of → ecosystems, having regional environmental, scientific or aesthetic importance, including formations which were formed, besides by → nature, also by the activity of man. A category of → Specially Protected Areas. As of September 20, 2016, there are 1.541 NMs in the Czech Republic.

Nature Reserve - smaller site/area of concentrated natural values with occurrence of → ecosystems typical and important for the relevant geographical region. A category of the → Specially Protected Areas. As of September 20, 2016, there are 815 NRs in the Czech Republic.

Organism – an individual animal, plant and other life form (fungal, algal or single celled ones) that is able to grow and reproduce. It is any biological entity capable of replication or of transferring genetic material.

Permanent grassland – a → grassland, either natural or artificial/ → anthropogenic, consisting of perennial plants that are permitted to remain for a number of years.

Phenology - the study of natural phenomena that recur periodically (e.g. development stages, → migration) and their relation to → climate and seasonal changes.

Physical planning – see → Land-use planning

Planning materials – documents used in → land-use planning consisting of planning analytical materials, which identify and evaluate the state and the development of territory, and of a planning study, which checks potentialities and conditions for changes in the area. They

are procured by law for the whole Czech Republic´s territory and continuously updated. Planning analytical materials serve particularly as data for procuring spatial development policy, planning documentation, their changes and for territorial decisions. They serve then as data for sustainable development impact assessment of planning documentation and strategic environmental assessment.

Policy - is a deliberate system of principles to guide decisions and achieve expected, ideally rationale outcomes. It includes a broad range of issues paradigms & conceptual frameworks, strategies (setting priorities, targets and goals), programmes and projects, measures in practice including those in the field and → monitoring & assessment.

Population – a group of individuals of the same → species occupying a certain geographic area over a specified period of time.

Population density – the relative number of individuals of a given → species that are found in a certain area. It is number of individuals of a certain species in a unit area or volume.

Propagule – a part of → an organism able to disperse and propagate.

Protected Landscape Area – an area with a harmoniously formed → landscape, a characteristically developed relief, a significant proportion of natural → ecosystems of forests and → permanent grasslands, with abundant presence of woody plants, or, optionally, with preserved monuments of historical settlement. A category of Specially Protected Areas. At present, there are 26 PLAs, 25 of them are managed by the Nature Conservation Agency of the Czech Republic.

Red data book – a publication presenting a Red List for a subnational unit, country, region or the world as well as the information on the species or other taxa included including on their bionomics, distribution, conservation status or actions to be implemented and drawings, illustrations, maps and figures.

Red list – the list of endangered → species or other → taxa within a subnational unit, country, region or the world. Most often, the IUCN criteria and categories are used for developing the RL. An importation information source for national legislation and prioritisation of species for implementing → action plans/recovery programmes, in the Czech Republic for → Specially Protected Species.

Refuge – a safe site or an area that offers protection or shelter for → wildlife and other organisms.

Renewable resources - natural resources that, after exploitation, can return to their previous stock levels by natural processes of growth or replenishment.

Reparcelling – see → Land replotting

Semi-natural – a part of the environment which has been affected in xxx extent directly or indirectly by human activity.

Significant Landscape Element - an environmentally, geomorphologically or aesthetically valuable part of the landscape, providing the characteristic appearance of the landscape (landscape scenery/character) or contributes to its stability. Significant landscape elements are forests, peatlands, watercourses, ponds, lakes, floodplains. Further, significant landscape elements shall be other parts of the landscape registered by a State Nature Conservancy authority as significant landscape elements, particularly wetlands, steppe grasslands, wildlife refuges, balks, permanent grasslands, mineral and fossil deposits, artificial and natural rock formations, geological outcrops and exposures. The SLEs do not include Specially Protected Areas.

Site of European Importance – a site/area that in the biogeographical region or regions, to which they belong, significantly contribute to: maintenance or restoration at a favourable conservation status of at least one type of → European habitats or of at least one → species of European importance, or to maintenance of biological diversity of the biogeographical region. As of September 20, 2016, there are 1,112 Sites of European Importance in the Czech Republic, covering 10.1 % of the country´s territory.

Soil erosion – a group of natural geological processes by which soil and rock material are loosed or dissolved and then moved from their original location. It is detachment and movement of topsoil or soil material from the upper part of the profile by the action of wind or running water especially as a result of changes brought about by human activity (such as unsuitable or mismanaged agricultural methods).

Specially Protected Area – an area which is highly important or unique from the point of view of natural science or from the aesthetic point of view. They are managed to maintain or improve their conservation status through → management plans. In the Czech Republic, there are six SPA categories: → National Parks, → Protected Landscape Areas, → National Nature Reserves, → National Nature Monuments,

→ Nature Reserves and → Nature Monuments. As of September 20, 2016, there are 2,613 SPAs in the Czech Republic, covering 16.7 % of its territory.
Specially Protected Part of Nature - a very important or unique part of biotic or → abiotic → nature. It can be a part of the → landscape, a geological formation, a tree, an animal, a plant, or a mineral, declared as specially protected by a State Nature Conservancy authority pursuant to the Act on Nature Conservation and Landscape Protection.
Specially Protected Species - the → wild plant, → wild animal or other (e.g., fungal) → species which are endangered or rare, of high scientific or cultural importance. According to the degree to which they are endangered, the specially protected species shall be divided into the following groups: (a) critically endangered species; (b) highly endangered species; and (c) endangered species.
Species – the base unit of taxonomic classification, consisting of an ancestor-descendant group of populations of evolutionary closely related, similar organisms. When applying the biological species concept, species is a group of actually or potentially interbreeding natural populations that are reproductively isolated from other such groups. The morphological species concept consider species as a group of individuals that look alike. Lineage species concept defines species as s branch of the tree of life, which has a history that starts at a speciation event and ends either at extinction or at another species event. A fundamental category for the classification and description of organisms.
species of European importance - → species in the European territory of the European Union Member States which is endangered, vulnerable, rare or endemic, and which is set out by the European Union legislation, namely Directive 92/43/ EEC on the conservation of natural habitats and of wild fauna and flora (commonly known as the Habitats Directive).
Species protection – a set of activities and measures aiming at maintaining numerous and therefore, genetically high-quality → wild plant, → wild animal and other (e.g., fungal) → populations which are viable in a long-term perspective and occurring in appropriately large and minimally degraded → habitats.
Species richness – the total number of → species living in an area/region.
Stakeholder - people or organisations which are vital to the success or failure of an organization or project to reach its goals. The primary stakeholders are those needed for permission, approval and financial support and those who are directly affected by the activities of the organization or project. Secondary stakeholders are those who are indirectly affected. Tertiary stakeholders are those who are not affected or involved, but who can influence opinions either for or against. Stakeholder are important players in → biological diversity → conservation and → sustainable use → policy.
Stepping stones - an array of relatively small, non-connected patches of → habitat that support temporary occurrence of wildlife also outside → core areas, thus allowing them to move across the → landscape. As a type of → biological corridor, a part of → ecological network.
Sustainable development – development that meets the needs of the present without compromising the ability of future generation to meet their own needs, which includes economic growth together with protection of the quality of the environment.
Sustainable use – the use of → organism, → ecosystem or other → renewable resource at a rate that is within its capacity for renewal. It is the use of components of → biological diversity in a way and at a rate that does not lead to the long-term decline in biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.
Taxon – a biological group (typically a → species or a → clade) that is given a name. A unit of any rank (i.e. kingdom, phylum, class, order, family, genus, species) designating an → organism or a group of organisms. Also known as taxonomic unit.
Taxonomic unit – see → Taxon
Taxonomy – the scientific discipline that is concerned with the naming and classification of organisms.
Technology - the collection of techniques, skills, methods and processes used in the production of goods or services or in the accomplishment of objectives, such as scientific investigation. Technology can be the knowledge of techniques (e.g., integrated ecosystem assessment, → taxonomy, developing → red lists, etc.), processes, etc. or it can be embedded in machines, computers, devices and factories, which can be operated by individuals without detailed knowledge of the workings of such things.
Territorial planning – see → Land-use planning

Territorial System of Ecological Stability of the Landscape – a multi-level → ecological network, being developed in the Czech Republic. It is a mutually interconnected complex of both natural and → semi-natural ecosystems, which maintain natural balance and ecosystem health. It includes local, regional (=subnational), and supra-regional (national and supranational) TSES. The TSES consist of → biocentres, → biological corridors, their buffer zones and interactive elements. Up to now, approx. 50,000 → biocentres and 85,000 → biological corridors of the supra-regional, regional and local importance, in total covering 21,525 km2 have been identified across the whole country (of them, the supra-regional TSES covers 12,612 km2, regional 5,867 km2 and local 3,046 km2. The TSES concept was developed in the former Czechoslovakia in the 1970s and the 1980s. It combines natural science approach (→ biological diversity, representativeness, spatial parameters), at the supra-regional level improved by biogeographical classification of the Czech Republic, with development of the cultural man-made used landscape, i.e. with → land-use planning. TSES is an obligatory part of land-use planning in the Czech Republic.

Urban sprawl – a growth of a metropolitan area, particularly the suburbs (the outer part of a city or urban area, close to the rural-rural boundary), over a large area.

Viable population - a → population in a state that maintains its vigour and its potential for evolutionary adaptation.

Wetland - land that is covered with water for at least of each year, and thus is transitional between terrestrial and aquatic ecosystems. It supports aquatic vegetation that is specifically adapted for waterlogged soil conditions.

Wild animal - an individual of animal species which occurs in → nature and is not in direct care of man. As an individual in direct care of man, there is considered an individual of animal species originating from breeding in captivity, which is unmistakably marked or identified by an irremovable ring or microchip or another unmistakable way and registered by a State Nature Conservancy authority.

Wildlife – a broad term for all uncultivated plants and undomesticated animals living freely in nature.

Wildlife trade - any sale or exchange of → wild animal and → plant resources by people. This can involve live animals and plants or a diverse range of products needed or prized by humans— including skins, medicinal ingredients, tourist curios, timber, fish and other food products.

Wild plant - an individual or a colony of a plant → species, including fungi, the populations of which are sustained spontaneously in → nature. It includes all its underground and aboveground parts.

ANNEX Č. 1

Strategic Plan for Biodiversity 2011-2020, including Aichi Biodiversity Targets

OVERVIEW OF AICHI BIODIVERSITY TARGETS

Strategic Objective A:
Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

Strategic Objective 1
By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Strategic Objective 2
By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes. And they are being incorporated into national accounting, as appropriate, and reporting systems.

Strategic Objective 3
By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed. The incentives are applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio-economic conditions.

Strategic Objective 4
By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Strategic Objective B:
Reduce the direct pressures on biodiversity and promote sustainable use

Strategic Objective 5
By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Strategic Objective 6
By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species,

fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Strategic Objective 7
By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Strategic Objective 8
By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Strategic Objective 9
By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment to prevent the introduction of invasive species.

Strategic Objective 10
By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Strategic Objective C:
To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

Strategic Objective 11
By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

Strategic Objective 12
By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Strategic Objective 13
By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimising genetic erosion and safeguarding their genetic diversity.

Strategic Objective D:
Enhance the benefits to all from biodiversity and ecosystem services

Strategic Objective 14
By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

Strategic Objective 15
By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Seminar of botanists in the Jeseníky Mountains, photo: D. Hlinková, NCA CR

Strategic Objective 16
By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Strategic Objective E:
Enhance implementation through participatory planning, knowledge management and capacity building

Strategic Objective 17
By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

Strategic Objective 18
By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Strategic Objective 19
By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Strategic Objective 20
By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.

Possibilities of Strategy Implementation at the level of Governments, the Private Sector and other Interest Groups

The strategy is primarily focused on the national level, i.e. the objectives and measures are the responsibility and interest of Central Governmental Authorities. The Action Plan of the Strategy is the State Nature and Landscape Protection Programme of the Czech Republic (2009, hereinafter referred to as the State Programme), its update will take place following the selected goals of the Strategy by the end of 2017. The State Programme will logically contain specific measures, but even in this case, it will concern the achievement of the objectives, especially, at the national level, i.e. through the central authorities of state administration. At the same time, the State Programme is focused on a narrower portfolio of activities that are aimed primarily at nature conservation in practice. This means that some areas which are partially or fully addressed by the Strategy are left out (e.g. chapters Private Sector, Public Administration, etc.).

The purpose of the Strategy is, therefore, to provide sufficient background and inspiration for the direction of policies and plans to conserve biodiversity created by other types of entities. Above all, it is the local authorities, private bodies and other interest groups – in particular the stakeholders in general. In the case of local authorities is relevant in particular the level of counties and municipalities with extended competency (MEC).

The aim of this chapter is to specify an appropriate methodological framework for the harmonisation of regional and local concepts with the objectives and measures of the Strategy. Even if the consideration of the Strategy by local authorities is entirely voluntary, it is in the general interest, to implement it as broadly as possible; in this direction, this chapter should/could bring a positive effect, in particular in the following areas:

- as an inspiration in the creation of regional and local concepts (focus objectives, measures and, where appropriate, indicators for measuring the success of the measures);
- in ensuring follow-up to the conceptual documents of a higher level;
- for coordination of activities with neighbouring local authorities;
- for individual consultations of specific projects with the Central Government.

The following text describes specifically a possible way how should/could regional authorities and municipalities with extended competency approach the Strategy. The aim is not to present a specific methodology, which is not possible due to the large number and diversity of approaches. Therefore, the identification of the possibility of continuation of the concepts and plans on objectives and measures of the Strategy demonstrated on individual examples that illustrate the implementation of selected measures.

The management of national parks and nature and landscape protection of the Czech Republic are not, regardless of their important role in the protection of nature, included into the enumeration. The first is the need for the harmonisation of their activities with the Strategy determined by their mission, and it will also be significantly controlled by the State Programme, which will be an Action Plan for the Strategy.

Regional Authority Level

In some countries with a larger area, the individual regions have their own "Regional" Strategies to conserve biodiversity. With regard to the size of the Czech Republic, it is not necessary to adopt such specifically targeted documents at the regional level. However, in its own way such level is created by regional concepts of nature and landscape conservation updated by the Regional Authorities regularly every ten years. The regional authorities shall elect a different structure and detail of these documents. Some are concentrated purely on nature conservation, others include a related field (e.g. tourism, sustainable development of natural resources). The National Biodiversity Strategy of the Czech Republic for the period 2016-2025 can give to the regional authorities the possibility to associate the priorities with the objectives laid down at the national level with the objectives that are being established at the regional level through regional concepts or other strategic documents. When updating the regional concepts, it can be recommended, following the objectives and measures of the Strategy, to prefer the harmonisation of objectives in the Priority Areas 1, 2 and 3. With regard to one of the main objectives of the Strategy – to a greater extent integrate biodiversity conservation across all relevant sectors, the aspect of the conservation of biodiversity and other strategic documents at regional level should be taken into account.

Another important area, where it is possible to take advantage of specific objectives and measures of the Strategy, are subsidy programmes that the regional authorities include within their own budgets. Examples from many regions show that the subsidy programmes in the areas of the environment significantly expand the possibilities for implementation of measures to support or conserve biodiversity. With this respect, the Strategy can provide, when taking into account regional specificities, an instructional framework for the selection of areas of support.

The following examples (here and in other parts of the chapter) show the types of measures that fully support the implementation of the Strategy at the regional level.

Example 1

Support for biodiversity in the area of Týnčanský kras, funded through Central Bohemian Fund for the Environment and Agriculture

Central Bohemian Region within its own programme "Central Bohemian Fund for the Environment and Agriculture" provided a subsidy (95% of the total cost) on the implementation of the project called "Promotion of Biodiversity in the Area of Týnčanského kras". The subject of the project were the implementations of two measures to support biodiversity. The first measure has been implemented because of the support of competitively weak plants and animals that are bound to a disturbed habitat. Typically, these are rare plants bound to limestone steppes, endangered insect species, e.g. butterflies and solitary bees. The area of Týnčanský kras has been selected as a place with simultaneous occurrence of these organisms. The involvement of thermophilic lawns and the reduction of the supply of habitats for these organisms occur due to the long-term abundance of areas from grazing. The disturbance was carried out in two ways. Firstly, during the formation of longitudinal strips with a blade excavator, which forms completely exposed sports of the surface, secondly during less intense disruption between these belts, which was carried out with the excavator bucket teeth and belts. This created diverse areas, which can be used with a different ecological niche organism. It was necessary to conserve the many nests of ants of the genus Myrmica, as there is occurring the wintering

Creation areas for organisms with a different ecological niche photo: project documentation, the regional authority of the Central Bohemia Region

Ensure a stable microclimate in the cave photo: project documentation, the regional authority of Central Bohemia Region

of rare species of copper butterflies, who are at the sites, during the intervention. It was also necessary to take into account the occurrence of surface karstic phenomena, which are preserved outcrops of rocks and limestone pavement (see photos below). The second subject of the project was the restoration/modification of the cave, which is located to the East of the village of Týnčany on the Northern slope of the Křemenice Hill in Týnčanský kras. The cave is located in a rock mound in the middle of fields. It is a 12-metre-long fissure cave created in crystalline limestones of sedlčansko-krásnohorský metamorphic islet Breaking stone unfortunately harmed the original morphology of the cave, which lost part of its roof. Therefore, it was freezing in winter. To ensure a constant microclimate in the cave, a ceiling was provided and a fly-in entrance was created. The ceiling and the entrance to the cave will have a decisive effect on the stabilisation of the microclimate of the cave area, and it is very likely that these areas will become winter quarters for smaller species of bats who have not used the cave as a hideout during the spring and autumn yet. Near this cave (500 and 400 meters) are other caves, which are known as wintering quarters for smaller species of bats (e.g. Daubenton's bat, the brown long-eared bat, the lesser horseshoe bat).

Example 2

Biodiversity support – the Nový rybník Natural Reserve, financed by the subsidy program "Support of Projects and Activities – Nature and the Landscape Protection" of the Pilsen Region

Nový rybník Natural Reserve (NR) (near the village of Líně, near Pilsen) – in the location of originally planned construction of production areas and the high speed line the zoning plan was changed from the initiative of the Pilsen Region, the NR was declared, where it is intentionally and in the long-term increased biodiversity from the regional budget:

- stabilisation of wetland levels, installation and maintenance of artificial islets for seagulls and terns, the construction of the ornithological observatory with detailed labels of species;
- keeping the flow of water streams into a wetland in a state when the slow flow does not flood out all the nutrients and at the same time the area is not too eutrophic. Exposed alluviums are maintained for bogtrotters.

Undesirable, spontaneously proliferated fish was taken aside to support the submersed vegetation and populations of amphibians. The construction of pools and nesting walls for bank swallows are in the stage of preparation in cooperation with NCA CR. The support concerns in particular the nesting and migrant species, but, as a priority, Black-headed gull, the Anseriformes, Black-necked grebe, Common tern, Little ringed plover, Western marsh harrier, 4 types of Acrocephalus, Grasshoppers, Bluethroat and others.

The Level of Municipality with Extended Competency

There is more than 200 municipalities with extended competency (MEC) in the Czech Republic. Their methodological guidance and local level of competencies takes place, in particular, at the regional level. The quality level of their methodological management varies according to region. In some of them there is regular consultation between the competent regional authority and the respective municipalities, in others such activity is missing. The role of MEC in nature conservation is, however, essential, because it influences the structure and hence biodiversity in so-called open landscape (excluding specially protected areas) within its competencies. It concerns mainly the registration and conservation of significant landscape components, defining the local level of the zoning system of ecological stability, review of the zoning plans and intentions in the landscape, etc.

MECs should in their activities inspire, in particular, by regional conceptions of nature and landscape conservation. In the framework of the Strategy, the Priorities 2 and 3 are particularly important.

Example 1

Activities of municipalities with extended competency in the Eastern part of the South Bohemian Region

Care of peaty meadows near Kardašovy Řečice, photo: P. Hesoun

Municipalities with extended competency in South Bohemian Region (in particular J. Hradec Municipal Office and Dačice Municipal Office Dačice) are actively using the NCA CR habitat mapping layer, the knowledge of terrain, or consultations with specialists on botany and phytosociology. In accordance with this, they shall cooperate with other municipalities, property owners and non-profit organisations, and initiate the care for the most important sites taking advantage of support from the Landscape Care Programme of ME. They inform about significant sites the listed entities, they acquaint them with the possibilities to obtain the subsidy from the Landscape Care Programme, often help them with the preparation of applications, communications between owners and non-profit organisations, etc. Several dozens hectares of the most important habitats, in particular, waterlogged and peaty meadows have been managed so far from the finance contributions from the Landscape Care Programme.

The Level of Private Entity

For private entities, the conservation of biodiversity is essentially a voluntary activity, if it does not address it as legal limits in its business activities, or their business activities are not linked to the use of natural resources (biotic and abiotic). In case of the voluntary activities, it is so-called Corporate Social Responsibility, which consists of three main pillars: economic, social

and environmental. Unfortunately, the companies have been rather focused on the first two pillars, and if they deal with the environmental one, then rather with regard to the quality of water, air, or waste recycling. Biodiversity so far does not stand too much in the most important of interests, and some companies are still trying to identify what measures and activities in the field of the conservation of biodiversity can be implemented. The planting of trees by the employees in the "green" activities of companies, in terms of the conservation of biodiversity, is in the sprout Czech landscape rather counterproductive. Companies also often tend to pass the greening of their areas (e.g. around business objects) off as nature conservation, but that is not true. There has, therefore, not been completed the space for cooperation between expert entities and companies yet, which clearly show the following examples.

Example 1

Kozmické ptačí louky near Opava – restored nature

Kozmické meadows near Opava, photo: K. Lísal

The beginning of the Kozmické louky Project dates back to 2006. The implementation itself took place in 2014. It concerns the creation of wetland communities in the Opava district. The NET4GAS project was co-financed by SEF – Operational Programme Environment, Priority Axis 6, Areas of Support 6.4. Optimisation of the landscape water regime in the amount of 5.4 million CZK. The investor added from his own funds over 4 million CZK, in particular, for the purchase of land and the designing of the project, tenders and the application process. The action was carried out in the framework of the program "Closer to Nature" (see the following example) and its implementation did not bring any economic profit to the investor, on the contrary, the annual maintenance calls for other tens of thousands of private funds.

Example 2

NET4GAS: Closer to nature

The conservation of nature is not understood only as the fulfilment of legal requirements, but primarily as a question of social responsibility by NET4GAS. This principle is based on its activities under the programme NET4GAS Closer to Nature. NET4GAs systematically and in a long-term helps projects for which the motto “Closer to Nature” is an important part of sustainable development. It is a long-term general partner of the Czech Union for Nature Conservation (ČSOP), which is involved in making the natural valuable sites accessible to the public. Often, it concerns places with the appearance of rare or endangered species of flora and fauna. They build nature trails, observatories, information boards, or interactive play elements, which aim to not only attract the public to nature and entertain, but also to arouse interest in nature conservation and respect for it. Additionally, it is a partner of national science competitions, Golden Leaf and Ecological Olympics, which are organised by the Association of Young Conservationists, the general partner of the Czech Association of Beleco and the main project partner of Our Nature in the publishing of the eponymous magazine. It also supports other organisations in smaller projects. The information are from the website www.blizprirode.cz.

Example 3

Cep II Sand Pit, photo: Českomoravský cement, a.s.

Care for the extracted sites – HeidelbergCement Group

Part of the strategy of the HeidelbergCement Group is to care for extracted sites. Although each mining company has this obligation to the law, the given norm can be fulfilled beyond legislative regulations. The company Českomoravský štěrk and Českomoravský cement approach the issue of reclamation or revitalisation in a modern way. In addition to traditional reclamation procedures, which are agricultural or forestry reclamation, in appropriate cases, the method of controlled succession is preferred. This procedure represents the support of spontaneously emerging vegetation, its fine-tuning and strengthening, in particular, the additional planting of native plant species.

An example of such quarry is Mašovice, located on the border of the National Park Podyjí. Close proximity of the protected area

increases the likelihood of spontaneous expansion of plant and animal species, including species at risk. Technical reclamation of this quarry was limited only to the security of the slopes and floors. The characteristic face of the quarry with rock walls and water surface on the bottom remained preserved, while biological reclamation is aimed at support and additional planting of strengthening and fast-growing wood.

Specifically, the model reclamation site via semi-natural recovery represents the mining area of the company Českomoravský štěrk called Cep II near Suchdol. There have been marked areas for this type of reclamation since 1998. Those areas were subsequently, in the framework of the first year of Quarry Life Award competition, examined and further extended, until an actual laboratory of semi-natural reclamation was founded. Currently, thanks to the extra cooperation with the contestants of the South Bohemian University, PLA Třeboňsko and other institutions are building the largest area of semi-natural reclamation in the Czech Republic. The information are from the website www.heidelbergcement.cz

Stakeholder Level

The stakeholder is anyone at individual or group level that may or may not have legal entity and may or may not be a public institution. It is in other words a voluntary or civic engagement. It can manifest itself as its own activity (nature-friendly behaviour, collecting garbage in the woods) or organised activities (e.g. within the land associations). In the case of public organisations, it is often their voluntary cooperation on improving the natural environment, which is also in accordance with their purpose (example 9). In terms of the impact, this group is essentially the most important with regard to the conservation of biodiversity, because it is in the general not just about the individuals but about the company and its general approach to nature conservation. Such activities can therefore count as well as teaching at all levels of schools, the so-called “Citizen Science”, etc.

The concept of activities can be very diverse, and the abovementioned examples are just a part of the possible involvement of the region centred primarily on the Priorities 1, 2 and 3.

Example 1

The non-profit organisation “Mokřady – ochrana a management z.s.”

This non-profit organisation brings together people interested in protecting wetland habitats of the Czech Republic. In particular, it deals with the practical care, especially in territories that have not been managed in the long-term and sprout waterlogged areas in the Vysočina Region. After an agreement with the owners and tenants in those locations, the organisation tries to ensure appropriate long-term care or implement measures that will maintain or increase the biological value of the site, or

directly support specific target endangered species. It focuses in its activities, in particular, on the issue of the conservation of amphibians which are at risk of decrease in suitable habitats for reproduction in the current landscape. In the context of amphibians, it is trying to support through the implemented measures, in particular, the most endangered species, such as Natterjack toad, European fire-bellied toad , Yellow-bellied toad and Northern crested newt. Unprotected areas, particularly waterlogged and humid sites are in the centre of interest. These habitats are missing in today's intensively used landscape and the existing ones cease to exist or disfigure due to the lack of care. It also significantly focuses on awareness-raising activities about the importance of wetlands, wetland care and everything else that is associated with them. It annually organises several events for the public, which seeks to involve the public into the practical care.

Example 2

Lifelong learning course "Current Trends in the Nature Conservation"

On the basis of the initiative of the practitioners, the Institute for Environmental Studies of the Faculty of Science, Charles University in Prague, organises the course of lifelong learning. The course responds to the long-term absence of ongoing vocational training with an emphasis on current trends. The aim is to enable workers to conserve nature and provide systematic education with regard to current knowledge to other interested parties and at the same time allow a discussion with leading experts on given topics. It is designed for all those interested, from the ranks of professionals and nature conservation volunteers. Particularly, it is suitable for nature conservation workers who want to complement their practical experience with theoretical knowledge from nature conservation.

Example 3

Sustainable tourism at Podblanicko

Podblanicko district is a positive example of the territory with a long-term focus on the sustainable development of the local economy and, in particular, to environmentally friendly forms of tourism. It is a systematic approach to the development, in close cooperation of nature conservation, local authorities and local small business owners. One of the causes of the involvement of local people in the development of sustainable local economy is the long-term continuity of the cultural identity of this community. The existence of the PLA here does not raise the usual clashes between tourism and nature conservation – for both sides the landscape represents a significant heritage and challenge not only for the sustainable development of tourism. Currently, the Region of the Blanik Knights National Geopark develops innovative products of geoturism.

A specific example of such a product is the Roudný Educational Trail, which takes the visitors to the former gold mine in Roudný

grounds, a significant geological monument of Podblanicko Region. A number of interesting places has been maintained after extraction, which took place both in the Middle Ages, and in the 19th and 20th centuries in the gold mine. There was an educational trail going through the gold mine in the past, which was, however, completely non-functional. The trail has been made available for all ages, including the location of interactive stops, which guided the movement of visitors after the site.

Example 4

Public service contract: the land owners and nature conservation in the Bohemian Paradise together

A part of the public service contract is also an annual mowing and other care of the site of the Leucojum vernum in NR and Plakánek SCI in the first zone of the SPA Bohemian Paradise, photo: Z. Patzelt

The contract was signed by representatives of the Kinský dal Borgo, a. s., and the Agency for Nature and Landscape Protection of the Czech Republic, it was closed in 2013 for a period of nine years and determines how should the land owner farm, if the interests of nature conservation are to be taken into account, and at the same time it determines what compensation for restrictions on the management belongs to the owner. The land is situated in protected landscape area of the Bohemian Paradise, a natural reserve and a site of European importance Údolí Plakánek, a site of European importance Podtrosecká údolí and a site of European importance Kost.

The land owner is provided exactly what to do - what kind of exact care do the protected species need, and at the same time, he/she knows what is the compensation for considerate farming – the care must not be loss-making for the owner. The natural conservation has a guarantee that the necessary care of the area will not change. Rules are laid down in the long term, it is not necessary to negotiate them each year.

For example, the agreement stipulates how many trees per hectare will not be felled during extraction in the woods and that there will be a cableway used instead of the tractor when timber harvest, it further specifies in which places it will be beyond the legal obligation to plant firs, oaks, hornbeams and beeches, and it specifies how often it will be necessary to mow the meadows and how to protect bats.

Contact details for the provision of more information and any additional communications that support the fulfilment of the objectives of the strategy at all levels

The Ministry of the Environment established for the communication in the field of implementation of the Strategy a unified e-mail address: **biodiverzita@mzp.cz**.

It is possible to ask at this address for more detailed information about how the Strategy and its objectives, targets and goals shall be implemented at the abovementioned levels. The Ministry of the Environment will also create an internal database where different entities (authorities, companies, stakeholders) can register in the form of sending of basic contact information (name, address, contact person, phone, email) to the abovementioned e-mail address. The advantage of a voluntary registration will be the reception of news from the Ministry of the Environment in the field of the implementation of the measures of the Strategy and the use of different supporting financial instruments.

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