

## Report

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## Executive summary

The main objective of this report is to provide guidelines for the selection of particular species for species action plans (and other species-specific tools) based on our experience gained over more than thirty years of implementing species action plans in the Czech Republic.

This report was elaborated within the EU LIFE project Conservation of Natural Heritage for Life in Ukraine, Work Package 2 – Common legislative space for Ukraine and the EU for nature protection.

## Introduction

Species action plans represent a complex of active measures for the protection of species in situ, complemented by ex situ measures (breeding or cultivation in culture). The basis of in situ protection is the protection of the habitats of the species concerned. Ensuring sufficient habitat area of appropriate quality is a key condition for any species action plan. Ex situ measures may be targeted at:

- creation (restoration) of the species population in areas of its historical range from which it has disappeared,
- increasing the size of a certain population and thereby reducing the probability of its extinction, known as population enhancement,
- establishing a new population of a species outside its historical range, if there is no suitable alternative within the original range – known as introduction,
- the individuals released/planted may either come from human care/cultivation or be transferred to their new destination from other areas where the species occurs in the wild – this is known as translocation.

A necessary condition for the preparation of a species action plans is sufficient up-to-date information on the biology of the species, its distribution, the causes of its endangerment, and ways to eliminate them. Each species action plan must have specific measurable goals and criteria for evaluating the plan's success. An essential part of species action plan is thorough monitoring before, during, and after the implementation of the planned measures. Feasibility studies of the proposed measures, analyses of genetic variability in populations, and quantitative models of population viability (Population Viability Analysis, PVA), which assist in selecting the most appropriate conservation measures, are standard components of species action plans. PVA is a set of methods used to evaluate the combination of all possible effects influencing the survival of populations of a given species, the risk of extinction, the chances of

recovery within a given timeframe, the impact of removal of some individuals on the development of the source population, etc.

For the planning of plant and animal reintroductions, the Species Survival Commission (SSC) of the International Union for Conservation of Nature (IUCN) has developed Recommendations for reintroductions and other conservation translocations (IUCN/SSC 2013). At the same time, it began regularly publishing summaries of case studies focused on the rescue of endangered animal and plant species in various parts of the world on its website <https://iucn-ctsg.org/> (SOORAE 2008, 2010, 2011, 2013, 2016, 2018, 2021).

The introduction to each of these publications also provides an overall assessment of the success of the projects presented, the majority of which are rated as at least partially successful, with only a negligible percentage being considered unsuccessful. However, as pointed out by the authors of review studies evaluating the results of species action plans published to date (FISCHER & LINDENMAYER 2000, GODEFROID & AL. 2011), the proportion of successful projects is actually much lower due to a general tendency to publish positive results. FISCHER & LINDENMAYER (2000), who focused on animals in their review study, and GODEFROID & AL. (2011), who focused on plants, cite several common aspects that determine whether a given project would be successful. Important factors include the number of individuals released/planted (more than 100), their origin (stable source populations), a suitable target habitat, and the elimination of the causes of the previous decline of the given species; in addition in the case of plants, for example, the use of seedlings instead of seeds. Translocations carried out to resolve conflicts between humans and certain species (large carnivores, etc.) have been completely unsuccessful. In any case, reintroductions are considered to be highly risky and enormously costly projects (GODEFROID & AL. 2011).

In the mid-1990s, the Standing Committee of the Bern Convention commissioned a study on species action plans (MACHADO 1997). The author described in detail the legislative frameworks for the preparation and implementation of species action plans at the global and European levels and in selected countries with a rich tradition in this field, and presented principles for the preparation of species plans. These recommendations formed the basis for Recommendation No. 59 (1997) of the Standing Committee of the Bern Convention on the preparation and implementation of species action plans for wild animals, which are generally applicable to plants as well. The most important conclusions to be taken into account in the preparation and implementation of species action plans are:

- Integrated ecosystem management and habitat protection are more important for biodiversity conservation than efforts focused on individual species. Action plans should therefore be limited in number and implemented only in critical cases.
- Species restoration refers to the preparation and implementation (practical application) of measures focused exclusively on species threatened with extinction. It should therefore be clearly distinguished from general species protection and general nature

conservation measures. The species recovery process can be greatly facilitated if the program is run by specialized government agencies and if the country has legislation that provides a legal framework for species protection and conservation and the necessary tools for implementing the measures.

- Giving an appropriate legal and administrative framework to species action plans should be considered.
- Clear selection criteria should be established so that the list of species designated for restoration does not exceed realistic limits. Given their direct benefit to conservation, umbrella species should be given high priority in this process. Endemic species should also be given priority (Endemism Responsibility Principle).
- When protecting and restoring more or less sedentary invertebrate species, such as mollusks and certain insects, an approach based on protecting entire communities is likely to be more effective. In these cases, a combined strategy for plants and invertebrates is particularly appropriate.
- People with practical experience in nature protection and conservation should be involved in the preparation of species action plans, so that overly scientific and unrealistic ideas can be avoided in advance.
- The public should be allowed to participate in the preparation of species action plans (or management plans), at least where the measures adopted are expected to have a socio-economic impact.
- It should be ensured that species action plans are based on sound studies on the biology of the population or species concerned, while avoiding unnecessary delays in implementation of the plans and the taking of conservation measures.
- Species action plans should have clearly defined main objectives so that progress towards recovery can be more easily monitored. Measures aimed at achieving these objectives should be prioritized over a "do everything at any cost" approach.
- Conservation measures should focus primarily on protecting and stabilizing existing populations and only secondarily on restoring the species' historical range and connecting isolated populations. In this sense, possible repatriation should be considered.
- Monitoring is an essential part of species action plans. It should be planned and included in the budget as research serving to track the results of the implementation of species action plans. The final report should always be based on thorough monitoring.
- It is better to prepare flexible and general programs for educating the public about endangered species than to create special awareness campaigns for each action plan. However, if the restoration of a given species requires special public support or encounters public resistance, a targeted campaign to raise public awareness is

necessary. Restoration plans involving many stakeholders should have a balanced coordination structure. It should be clearly defined who is the primary responsible partner.

- Species action plans must be financed directly if they are to be implemented effectively. Cost estimates should be determined responsibly and should reflect priorities. Any costs associated with land purchase should be listed separately in the budget.
- It is recommended to collaborate with other states, in the framework of the Bern Convention, in the framework of the European Action Programme on Threatened Species (Action Theme 11 of the pan-European Biological and Landscape Diversity Strategy) and in whatever other appropriate framework, in the drafting, implementation and follow-up, as appropriate, of species action plans, especially for those species whose conservation requires the co-operation of several states, and promote such co-operation. Consult relevant neighbouring states while planning and carrying out action plans of transboundary populations.
- The success of the species action plan depends greatly on the level of professionalism and organization.

The method of selecting suitable candidates for the implementation of SAPs is one of the most discussed topics in professional literature. In the foreign literature (e.g., USFWS 1983, LUNNEY et al. 1996, MACHADO 1997, BÁLDI et al. 2001, RESTANI and MARZLUFF 2002, KELLER and BOLLMANN 2004), the possibility of scoring individual species based on their ecological requirements, degree of endangerment, interactions with other components of the natural environment and humans, and other indicators is mentioned. Although this method appears to be the least susceptible to subjective assessment by the proposer, it is largely unusable in practice. A system based on a small number of assessed criteria is not sufficiently sensitive for the purposes of selecting priorities for SAPs, and a detailed system such as that used in Hungary (BÁLDI et al. 1997), is very demanding in terms of sufficient quality data, which is not available for a number of taxa, and results in the favoring of more known taxa (e.g., vertebrates). Because similar classifications are based on classical Boolean logic (true – false, yes – no), they cannot distinguish, for example, whether a zero for a particular species in the endemic taxon category means that the species is not endemic to the assessed area or whether the assessment is the result of our limited knowledge of the taxon's distribution. In addition, some of the criteria evaluated overlap partially, and different criteria also have different weights in the decision-making process.

## Active Species Conservation Tools in the Czech Republic

In the Czech Republic, we use three types of active tools to support species: species action plans, regional species action plans and species management plans. While species action plans and regional species action plans are really used for active management to support specific species, species management plan is different – it is primarily used to eliminate conflicts with human interests, problems arise and the sustainability of their occurrence in the territory of the Czech Republic. In all cases, these are special tools that require significant financial and human resources. In the Czech Republic, we have approximately 10,000 taxa on the red list, ca 1000 specially protected species, but we only implement these plans for a very small number of the latter.

The main document describing the active species conservation tools, candidate selection, and preparation process is Concept of Active Species Conservation Tools in the Czech Republic 2023-2032. This concept was approved by the Ministry of the Environment of the Czech Republic and is available on a dedicated action plans website (<https://www.zachranneprogramy.cz/o-zachrannych-programech/koncepcie-zp-a-pp/>).

An overview of all approved and planned active species conservation tools is available on the website <https://www.zachranneprogramy.cz/>.

The differences between these three tools and the criteria for selecting species are described below.

### Species action plans

Species Action Plans (SAPs) are being prepared for species that would face a very high risk of extinction in the Czech Republic in the next 20 years unless remedial measures are urgently initiated. At the same time, this risk cannot be averted by routine habitat management of these species and special measures are needed, including handling of individuals, rescue breeding or cultivation in culture, strengthening of populations, etc. A necessary condition for the implementation of the Species Action Plan is an assessment of its importance and the feasibility of restoring or enhancing its population(s) according to the Concept. SAPs are comprehensive, scientifically based projects that aim to use a combination of different types of measures to increase the population of the species concerned and stop the threat of extinction in the wild.

The institution of SAPs was introduced into the Czech legal system by Section 52 of Act No. 114/1992 Coll. on the protection of nature and the landscape. Their development and implementation is incorporated, among other things, in the State Program for Nature and Landscape Protection of the Czech Republic for the period 2020–2025 in its objective 2.3.2.



The creation of a legislative framework for SAPs is seen as a necessary condition for ensuring the effective protection of the most endangered species (e.g., MACHADO 1997). The second requirement is the appointment of a state institution that is responsible for coordinating the preparation and implementation of SAPs and for ensuring their professional quality. Non-governmental organizations and private individuals are, of course, involved (often to a decisive extent) in the implementation of SAPs, but the responsibility for the protection of species and, more generally, biodiversity lies with the state. In this respect, the legislative anchoring of SAPs in Act No. 114/1992 Coll. was a very progressive step at the time.

The competence to ensure and approve SAPs for specially protected plant and animal species is assigned by law to the Ministry of the Environment, which does so in cooperation with other nature conservation authorities, land owners and tenants, civil associations, and other professional entities. The Ministry entrusted the coordination of the implementation of SAPs to the NCA CR. There are currently 14 species action plans running in the Czech Republic. As part of the LIFE Prospective project, we plan to double this number by the year 2033.

## Candidate species selection criteria

Specific selection criteria were proposed for choosing priority species for which it is appropriate to implement a SAP in the Czech Republic. The conditions listed below were compiled taking into account the geographical location of the Czech Republic, the low representation of endemic species, and an analysis of the available data on the candidates under consideration. A taxon that is a candidate for a SAP must meet all criteria.

### Criteria:

1. The species is listed as a specially protected species in Decree No. 395/1992 Coll.
2. The species is currently endangered in the Czech Republic, i.e., it is listed in the national red lists for the Czech Republic (published by NCA CR) in the critically endangered (CR) or endangered (EN) categories.<sup>1</sup>
3. The species is included in the red list due to observed or predicted decline in numbers or reduction in range directly threatening its survival in the Czech Republic<sup>2</sup>.

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<sup>1</sup> The species also meets the criterion if the valid red list for the given group is not up to date and there is relevant data indicating that it should be included in the relevant category.

<sup>2</sup> Some species are included in red lists due to their small populations linked to specific, spatially limited habitat types (e.g., alpine treeless areas), but they do not show significant changes in abundance over the long term. These species are not candidates for SAPs; their conservation must be based on permanent measures (individual protection of specimens and consistent conservation of habitats) and regular monitoring of the status, changes, and development trends of their populations.



4. The species is demonstrably endangered in other parts of its range, i.e., within Europe<sup>3</sup>.
5. The species is neither at the edge of its range in the Czech Republic nor it has historically been there. If this is not the case, it must be threatened within its range (for widely distributed species, the relevant lower taxonomic unit is assessed<sup>3</sup>), it must be a species of European importance, or the populations of the species in the Czech Republic must be significant (genetically distinct, geographically significant, etc.)<sup>4</sup>. Species at the edge of their range are at increased risk of population extinction precisely because they are at the edge of their range and as a result, their localities are continuously disappearing/moving elsewhere.
6. In the past, there was evidence of a stable, viable population of the species in the Czech Republic.
7. The causes of the threat are known and removable, i.e.:
  - 7.1. the source (location) of the threat that has an intense impact lies within the territory of the Czech Republic<sup>5</sup>,
  - 7.2. removing the causes is feasible from a technical, financial, and personnel perspective<sup>6</sup>,
8. The ecological requirements of the species and its biology are sufficiently known<sup>7</sup>.
9. Active species measures are necessary for the conservation of the species.

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<sup>3</sup> This condition does not apply to Czech endemics. If a taxon is rare in the Czech Republic and at the same time on the edge of its range, while being abundant in other parts of its range, it is not a priority species for species conservation in the Czech Republic. Exceptions are species that are rare even in a significant part of their range, or whose population in the Czech Republic is particularly important from a taxonomic point of view or for other reasons. For species distributed over large areas (e.g., Palearctic distribution type), it is possible to assess a lower taxonomic unit, such as a subspecies or even a local population.

<sup>4</sup> Within this condition, it is necessary to consider how the SAP would contribute to the conservation of the species within its range.

<sup>5</sup> In the case of migratory animal species (especially birds), the main causes of threat to the species may occur outside the territory of the Czech Republic, e.g. during migration or at wintering sites. These causes cannot be eliminated by SAP in the Czech Republic, and the probability of success of the SAP is significantly reduced.

<sup>6</sup> Restoring the population of a particular species could require disproportionate costs, e.g., to create a habitat that has disappeared as a result of changes in land management. The implementation of some SAPs may also be limited by a lack of human resources.

<sup>7</sup> The main focus of SAPs is on specific measures to support the species, not just research. The identification of the causes of endangerment must precede the proposal of a SAPs.

It follows from the above points that the current candidates include mainly those species for which there exists a high level of expertise regarding their ecological requirements, causes of endangerment, and decline. Meeting of all the conditions for species selection will help to partially reduce the risk that the SAP will be more of an experiment with a difficult-to-predict outcome. When assessing the degree of extinction risk, it is advisable to take into account the results of the Population Viability Analysis (PVA). In the absence of data necessary to perform a PVA, the "best expert judgment" is used.

Among the species meeting the above criteria, priorities are established based on the following preferential conditions:

- a. Endemism.
- b. Umbrella species for a group of endangered species or for an important/endangered biotope.
- c. Key species in the ecosystem.
- d. International protection of the species.
- e. Attractive species for the public.
- f. The project is expected to be sustainable after its objectives have been achieved (without significant costs).
- g. Expertise – the species is studied by experts who are able and willing to cooperate in the creation and implementation of the SAP.
- h. Feasibility of the SAP (advantages include, for example, state ownership of land with suitable habitats – such as NCA CR, cooperating owner, etc.).

## Regional Species Action Plans

Regional Species Action Plans (RSAPs) are prepared for species that are regionally important, declining or threatened with extinction and whose conservation requires species manipulation and/or species-specific management that would not be provided by routine habitat management. Regional Species Action Plans are a relatively new instrument in the current Concept and are not yet specifically regulated by law. As opposed to SAPs, which are approved by the MoE, the RSAPs are prepared by individual regional NPAs and approved by NPAs headquarters. The RSAPs are thus easier to organise and can therefore respond more flexibly to the need for active measures to support individual species. They also reflect regional priorities in species conservation. These species are often umbrella species, whose conservation also covers the requirements of other threatened species of animals and plants in specific habitats. Due to its novelty, RSAPs have only been used to a limited extent so far. Wider use of this tool is hampered mainly by insufficient staff capacity to prepare and manage the implementation of the Regional Species Action Plans, but also by the lack of

methodological guidance of the nature protection authorities outside the NCA CR for the use of this tool for active species conservation. There are currently 17 RAPs running in the Czech Republic.

## Candidate species selection criteria

The following criteria shall apply when selecting species for regional action plans:

1. The species is included in the national red list for the Czech Republic (published by NCA CR) in the categories RE, CR, EN, or VU<sup>8</sup>.
2. The species is declining in the region or is threatened with extinction (species in decline in the region + rare in a specific region).
3. Active conservation of the species is necessary (e.g., ex situ conservation, population reinforcement, reintroduction, etc.) or species-specific management beyond the scope of regular habitat conservation.
4. The causes of the threat are known and removable.

### Supporting criteria

- a. Regionally significant species.
- b. Genetically unique populations with declining habitats or populations.
- c. Umbrella species.

## Species Management Plans

Species Management Plans (SMPs) are developed for species that are not at immediate risk of extinction but are classified as specially protected and due to the economic damage they may cause or due to other conflicts with human interests, problems arise and the sustainability of their occurrence in the territory of the Czech Republic is threatened (by increasing their pursuit on the one hand and the extent of damage on the other). These plans can be considered similar to management plans, which are recommended for some species under international conventions, etc.

The conservation of these species cannot be ensured solely by non-specific measures (legislative instruments, non-specific habitat management, etc.), but requires a comprehensive approach. The main focus of the plan is on measures to ensure achieving the

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<sup>8</sup> The species also meets the criterion if the valid red list for the given group is not up to date and there is relevant data indicating that it should be included in the relevant category.

conservation objectives for these species, in particular, various forms of conflict management or reduction, basic species management, usually combined with awareness-raising activities, especially among interest groups and the general public. Breeding, releasing, or enhancings; strengthening wild populations is not the purpose of the management plans. However, a fundamental part of the plan is species monitoring, which provides objective data on the status of populations and the extent of damage caused. Management plans mainly include administrative, legislative, and educational measures, with active management measures for individuals of the species being applied only to a limited extent. However, they may also include other measures to ensure the conservation of species.

SMPs, like RSAPs, are not specifically regulated by law, but are developed as departmental documents that are both methodological and conceptual in nature. However, the development and implementation of SMPs is enshrined, for example, in the State Program for Nature and Landscape Protection of the Czech Republic for the period 2020–2025 in objective 1.1.2: “Ensure a comprehensive approach to the conservation of selected specially protected animal species with conflict potential, including addressing the socioeconomic aspects associated with their spread.” There are currently 3 SMPs running in the Czech Republic, two more are in preparation.

## Candidate species selection criteria

1. A specially protected species or a species listed in Annex II or IV to the Habitats Directive,  
and at the same time,
2. The species causes economically significant damage or its synanthropic occurrence causes conflicts with regular human activities

## Implementation process SAP and SMP

Practical coordination and professional supervision of the implementation of SAP and SMP is carried out by the NCA CR in accordance with the authorization from the Ministry of the Environment (MoE). In the case of RSAP, implementation, coordination, and evaluation are ensured by the regional branches of NCA CR.

The NCA CR establishes a coordinator and implementation team for each SAP or SMP. The implementation team is a working group whose members include employees of the NCA CR, representatives of locally relevant nature conservation authorities, specialized organizations, and external experts who are directly involved in the implementation of the SAP/SMP. The coordinator of the SAP/SMP and a relevant employee of the MoE are always members.

The coordinator, in cooperation with regional branches and other nature conservation authorities, ensures the annual implementation of planned measures.

The success of the implementation of the SAP/SMP is regularly evaluated by the NCA CR in relation to the fulfillment of medium-term and long-term goals. At the request of the MoE, the program is evaluated for the first time no later than at the end of the first implementation stage of the SAP, i.e., at the time of the expected fulfillment of medium-term goals, usually after five years of implementation.

A long-term evaluation of the SAP/SMP is prepared approximately 10 years after implementation. The evaluation is then submitted to the MoE for approval. Based on long-term evaluation or significant changes in knowledge of SAP and SMP, the MoE requests the NCA CR to update them. The updated version of the SAP/SMP is submitted by the NCA CR to the MoE for approval – the procedure is similar to that for submitting a new plan. Minor amendments or updates to the SAP/SMP are approved by the MoE on an ad hoc basis in the form of an addendum or amended text.

The SAP/SMP is terminated for the following reasons:

- inability to achieve long-term goals through the proposed or other measures – an evaluation of the effectiveness of the plan's implementation shows that the proposed and implemented measures are ineffective and there are no other measures that could achieve the goals;
- after the long-term goals of the SAP/SMP have been achieved – an evaluation of the effectiveness of the plan's implementation shows that the proposed and implemented measures were effective and the goals were achieved.

## Recommendations for Ukraine

From the three forms of species plans applied in the Czech Republic, probably the most recommendable are the Species Action Plans aimed at the most endangered species throughout the country. Therefore, the following recommendations are linked to this form of species plans.

SAPs in the Czech Republic are always nationwide, covering all locations where the species occurs in the country. Given that the Czech Republic is small, this is manageable, although coordination is more complicated for species that occur in a larger number of sites (several dozen). We are not sure whether a similar approach would be possible in Ukraine.

We recommend a careful candidate selection. Any species, which has its last remaining population in a single location and only a small number of individuals remaining, is very difficult to save, and there is a high probability that every effort will be unsuccessful.

It is necessary to carefully evaluate the possibility of eliminating the causes of species decline. If, for example, the decline of a species is largely due to irremovable climate changes, it is very difficult or even impossible to achieve the objectives of a SAP. We have faced this problem in the CR in the case of some plant species.

It is essential to have a professional support, i.e., experts who are experts in the species and ready to participate in the drafting and, ideally also, implementation of the SAP.

The advantage is to legislatively anchor the preparation and implementation of SAPs and to designate the responsible institutions. It would also be ideal to allocate a stable annual amount of money for the implementation of the plans. We have not been successful in this in the Czech Republic until now; we carry out SAP implementation from all possible national sources as well as from short-term projects. We also have a problem with the turnover of SAPs coordinators, which disrupts continuity and makes collaboration with other entities difficult. We have not yet found a solution for how to retain them in a long-term.

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## ANNEX – Outline for an animal species action plan

An example of a SAP in Czech/English language is available for download [here](#).

### SUMMARY OF THE SPECIES ACTION PLAN

The summary of the action plan must be prepared in such a way that it provides as complete and brief information as possible about the reasons for its preparation, its objectives, and the manner of its implementation.

### 1. BASIC INFORMATION FOR IMPLEMENTING THE ACTION PLAN

#### 1.1. Taxonomy

Specify who described the species and when, with reference to the citation of the species description (checklist, monograph, etc.), where you obtained the names of the species and its morphological variations, synonyms, or species names in English, German, French, and Russian, the existence of intraspecific units, subspecies, the genotype of the species, the hybridogenic potential of the species (with which species and how often it crosses, assessment of the risks of this crossing in species conservation, assessment of the risks of disruption of intraspecific variability, etc.) .

#### 1.2. Distribution

##### 1.2.1. Overall Distribution

Describe the historical and recent distribution of the species throughout its range, as well as its current occurrence and abundance in neighboring countries. Assess the importance of the Czech Republic within the species' range. Attach a map of the current range (see Annexes). Describe the decline in the abundance of the species (when it occurred, its rate and extent). Changes must be assessed both within the Czech Republic and in terms of the overall distribution of the species. The natural dynamics of the population must also be taken into account, both in terms of abundance and distribution (fluctuations, oscillations).

## 1.2.2. Distribution in the Relevant Country

### 1.2.2.1. Historical Distribution

For a better understanding of the habitat requirements of the species, describe its historical distribution in the Czech Republic, in particular its distribution over the past 50 years, and state the reasons, if known, why the species no longer occurs in its historical locations.

### 1.2.2.2. Recent Distribution

Accurate knowledge of the distribution, abundance, and structure of the species population over the last twenty years is key information for planning conservation measures. Provide estimates of abundance or, if available, precise data on the number of individuals of the species occurring in the country. If a detailed census has been carried out, cite the published results or, if available, its authors and date. Provide the age composition of the population, sex ratio, and other population characteristics. Attach a list or database of all known locations of recent occurrence of the species (i.e., in the last twenty years) with the following information: name of the location, geographical coordinates (if available), cadastral area, district, grid mapping square number, conservation status of the location (name of specially protected area, significant landscape feature, etc.), date of observation, abundance. A map of the recent distribution of the species in the country is also a necessary attachment to the document (see Annexes). Data on the distribution of the species will be included in the Nature Conservation Findings Database.

### 1.2.2.3. Distribution Trends

Describe current trends in species distribution dynamics, changes in species range boundaries, and negative/positive causes of these changes affecting species population size.

## 1.3. Biology and Ecology of the Species

Only include facts and information that are relevant to the planning of an action plan for the species. Distinguish between generally known facts and your own findings, new and previously unpublished information.

### 1.3.1. Habitat Requirements

Detailed information on the habitat requirements of the species

### 1.3.2. Reproduction and Life Strategy

Describe the reproduction and social behavior of the species. Indicate when reproductive maturity is reached and what proportion of the population participates in reproduction. It is necessary to emphasize the peculiarities of the ecology of the species that could affect the

success of conservation measures (e.g., colony forming, shared mating grounds, care of young, hierarchy in social groups, etc.).

### 1.3.3. Food Ecology

Food can be a limiting factor in the spread of a species. Provide information on the composition of food, methods of obtaining it, food competitors, and differences between individual locations.

### 1.3.4. Movement, Migration and Demographic Parameters

Indicate whether the species in question migrates regularly or only makes shorter journeys, describe the modes of dispersal, significant routes, and periods of movement. Also describe the size and structure of the territory, home range, the extent of fidelity, philopatry, etc. If there is knowledge about age structure, sex ratio, and other population characteristics, it is desirable to elaborate on them at this point.

### 1.3.5. Role in the Ecosystem

Describe the role of the species in the ecosystem, whether it transforms the environment it inhabits, its position in the food chain, and its most significant predators. If it is a parasite or host, or if it has a symbiotic relationship with other species, emphasize this fact. Also indicate whether it is a keystone species and under what conditions.

## 1.4. Causes of Risks to the Species

In order to formulate the goals of the action plan accurately, it is necessary to analyze in detail the causes of the threat to the species (within the entire range of the species and its occurrence in the country) and to evaluate which problems should be considered priorities in the action plan. List the individual known and potential factors as separate points. Assign a degree of importance to each factor (critical factor, highly significant factor, moderately significant factor, insignificant factor) and rank them based on this assessment. If the simultaneous effect of several factors is known (synergistic effect), state this fact. If appropriate, state the causes of the threat to the species separately for each location where it occurs.

## 1.5. Protection Status

### 1.5.1. Protection Status on the International Level

Indicate the species' classification in the IUCN Red List – International Union for Conservation of Nature (BAILLIE et al. 2004, IUCN 2004), in the annexes to Directive 2009/147/ES on the conservation of wild birds and/or Directive 92/43/ES on the conservation of natural habitats

and of wild fauna and flora. Describe the protection of the species under international conventions (Convention on International Trade in Endangered Species of Wild Fauna and Flora – CITES; Convention on the Conservation of European Wildlife and Natural Habitats – Bern Convention; Convention on the Conservation of Migratory Species of Wild Animals – Bonn Convention; also according to individual agreements negotiated within this convention (Agreement on the Conservation of Populations of European Bats – EUROBATS; Agreement on the Conservation of African-Eurasian Migratory Waterbirds – AEWA). For birds, indicate their classification among Species of European Conservation Concern (HEATH & al. 2000) and in the European Threat Status classification of endangered bird species (BIRDLIFE INTERNATIONAL 2004).

#### 1.5.2. Legislative Aspects of the Species Protection

Describe the form of legislative protection for the species in the country. List other legal regulations and describe their impact on the status of the species, which can be used more effectively in the protection of the species habitat or which may arise during the implementation of the action plan and thus affect the course of the action plan

#### 1.5.3. Protection Status in Other Countries with Recent Occurrence of the Species

List the legislative norms for the protection of the species in other countries where it occurs. Indicate whether and in which category the species is listed in the Red Lists of other countries where it occurs.

### 1.6. Present Measures to Protect the Species

#### 1.6.1. Non-specific Protection

Describe whether and how territorial protection of the species is ensured abroad (national parks, reserves, sites of the EU Natura 2000 network of protected areas, etc.) and in the country (specially protected areas, temporarily protected areas, including the protection regime of the management plan, etc. and its time frame) and further indicate which non-specific management measures implemented abroad and in the country help to improve the condition of the habitats of this species. Divide this chapter into two points:

##### 1.6.1.1. Non-specific Protection Abroad

##### 1.6.1.2. Non-specific Protection in the Country

#### 1.6.2. Specific Conservation

Describe in detail all measures implemented to date aimed at the rescue and care of the species (individual types of measures, methodologies, and methods of application) and state their results (including citations of publications, etc.), if known. When planning a action plan, it is necessary to compile an overview not only of successful measures, but also of unsuccessful

actions and measures whose results are unknown. For each measure, indicate who implemented it and where, and evaluate its effectiveness. If there is any experience with breeding the species in human care and with repatriation attempts, describe them in detail. For evaluate the success of repatriation (survival rate of released/planted individuals) in subsequent years, their integration into the wild population and participation in reproduction, listing the factors causing mortality of released/planted individuals. Divide this chapter into two parts.

#### 1.6.2.1. Measures Implemented Abroad

#### 1.6.2.2. Measures Implemented in the Country

## 2. AIMS OF THE ACTION PLAN

Set long-term aims for the action plan and summarize them in short, clearly formulated points. Specify clear, measurable goals to be achieved during the implementation of the action plan that will contribute to improving the status of the species in such a way as to avert its extinction or halt the decline of the population(s) and enable the species to continue to exist without the need for targeted support. Long-term Aims are the overall goals of the action plan; once they are achieved, the action plan will be terminated.

Next, set medium-term aims (objectives of key measures to be implemented, etc.) for the action plan for the given stage of program implementation (5 to 10 years) that will lead to the fulfillment of the long-term objective(s). The fulfillment of medium-term aims and their effect in relation to the achievement of long-term objectives will be evaluated at five-year intervals (evaluation based on the results of research, monitoring, and implementation of individual types of measures proposed in the action plan), and medium-term objectives will be updated as necessary.

Short-term goals will be set within the framework of implementation projects (one to two years) whose description is not covered by this framework.

## 3. PLANNED MEASURES OF THE ACTION PLAN

Description of each measure listed in the following subchapters will be divided into two sections: Motivation (justification) and Content of the measure. The Motivation section will explain why the measure is being proposed, and the Content of the measure section will provide a brief description of the measure. Where appropriate, detailed explanations of the

proposed measures will be provided in the form of a separate methodology in the annex to the plan.

### 3.1. Biotope Management

Given that biotope management is in most cases the most effective way of protecting a given species, this group of measures deserves the greatest attention. Formulate individual measures as separate points. The formulation of the measure must clearly indicate the method of its implementation, the time frame (e.g., whether it precedes or follows other measures, its frequency), and the reasons why it is necessary to implement it. For methodologically complex types of measures, provide a detailed specification in the annex to the action plan in the form of a methodology. Rank the individual measures according to their degree of importance.

### 3.2. Species Management

At this point, specify which measures relating to the species' own managements will be implemented during the individual stages of the action plan. For animals, these include, for example, release, supplementary feeding, reproduction support, disease control, disturbance reduction, nest monitoring, etc.; for plants, these include in situ measures (e.g., protection against pests and herbivores), ex situ species conservation (conservation cultivation, gene bank), in vitro rescue, and repatriation. For each measure, indicate its location and how it will be implemented (the methodology will be attached to the action plan). In the case of interventions that pose a risk of disrupting the species' gene pool (repatriation, reproduction support, ex situ measures, planting, etc.), describe and assess the possible risks and indicate in which cases it is necessary to perform genetic analysis or take measures to prevent the gene pool from being affected, and describe the methods needed to achieve this.

### 3.3. Monitoring

Propose a system for monitoring the status of the population (parent population and, where applicable, newly established populations) and specify how the action plan will be monitored and at what intervals in relation to the individual stages of the plan. As part of the monitoring, it is necessary to continuously evaluate the results (fulfillment of measures, changes in the population status, if any, impact of partial measures on the population status) on an ongoing basis (annually in annual reports and once every five years in final updates).



### 3.4. Research

Specify which missing data on the species' bionomics need to be added and explain how this information will contribute to the fulfillment of the action plan aims. Describe the purpose of the research in the form of individual types of studies and what can be expected from it based on an analysis of the facts known to date.

### 3.5. Training and Education

Plan a method of raising awareness and educating the public (in the form of online presentations, articles, lectures, leaflets, reports, documentary films, etc.), with the particular aim of reaching relevant interest groups. Consider whether and, if so, which of the planned steps would be appropriate to publicize more widely in the media.

### 3.6. Other Measures

If necessary, specify other measures necessary for the successful implementation of the action plan that do not fall under the above points

## 4. IMPLEMENTATION PLAN

In the form of a table, provide a summary list of all measures and for each of them indicate: 1) its priority, 2) implementation date, 3) whether it is a one-off or recurring measure, 4) whether the measure follows or precedes another planned measure, 5) the expected implementer, and 6) provide additional details in the comments (e.g., more specific information on the intensity or method of implementation).

## 5. REFERENCES

Please include references to literary sources and any other sources (web addresses, etc.) used in the text.

## 6. APPENDICES

Recent area map of the species

Recent distribution map of the species of the country

List of recent occurrence localities of the species in the country



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## Methodologies for individual measures in the implementation of the action plan