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## NATURE CONSERVATION AND LANDSCAPE PROTECTION IN THE CZECH REPUBLIC

M. Čihař: *Nature Conservation and Landscape Protection in the Czech Republic*. – Geografie-Sborník ČGS, 101, 2, pp. 180 – 189 (1996). – The article deals with the historical aspects and current trends in nature conservation and landscape protection in the Czech Republic. The internal structure of this branch is described as are some societal and economic contexts. The legal framework of environmental protection and basic legal terms are mentioned. The current trends are shown on four sub-branches: protection of species, protection of dispersed greenery, regional protection, and geological protection. The analysis of concrete data allows to judge the state environmental policy and its negative and positive impacts on the nature conservation and landscape protection.

KEY WORDS: nature conservation and landscape protection – environmental legislation – historical aspects and current state of the environmental policy.

### 1. Introduction

The nature conservation and landscape protection in the Czech Republic are integral parts of the environmental sphere. This branch is a specific one and in many aspects stands close to the geographical perception of the reality. As such it undoubtedly deserves attention.

The current legislation defines the protection of nature and landscape as “the care of wild animals, plants, and habitats, of minerals and rocks, palaeontological finds, geological units, the care of ecosystems and landscape features as well as the care of accessibility and aesthetic aspects of the landscape. This care is provided by the state, individuals, and companies.” Conservation and environmental efforts mostly focus on the natural balance, on the reconstruction of biological diversity, natural features and beauties, and on the reasonable management of natural resources.

### 2. History and Present

Some historical data will be mentioned first.

The *Maiestas Carolina* decree, issued by the Czech King and Roman Emperor Charles IV, is probably the earliest written document that deals with environmental issues. It came into existence in the 14th century and concerned the forest management and protection. Hojná Voda and Žofínský prales, two virgin forests, were proclaimed nature reserves – among the first in Central Europe – by the far-seeing Count of Buquoy as early as 1838. Later, some more protected areas came into existence in Bohemia and Moravia under the Austro-Hungarian Empire. There were also associations focused on nature protection and raising the public awareness.

Things changed after 1918 when the independent Czechoslovak Republic emerged. Nature protection was institutionalized. Mr. Rudolf Maximovič became the head of Czechoslovak nature protection. 142 protected areas were proclaimed by 1939. The Act No. 40 of 1956 was the result of long-time efforts: it first officially sanctioned the responsibility of state for nature protection. The first large-scale protected area (Český ráj; 125 km<sup>2</sup>) had been proclaimed one year earlier. The first Czech National Park (Krkonoše; 385 km<sup>2</sup>) came to existence in 1963.

The Czechoslovakia of that time, however, has been since 1948 part of the Soviet sphere. The Soviet dominance has influenced all fields of human activity including the environmental protection. Though many new protected areas have been proclaimed (see further text), the above mentioned No. 40 Act was approved and environmental protection received the institutional framework, the disparities between oral proclamations and actual state of the art of the environment became more and more apparent. Real environmental data, however, could be publicized only after the political changes of 1989. Most of them were rather unpleasant. It became publicly known that 80 % of the Czech Republic suffered from degradation of all environmental components, including the natural environment (Figure 1). Most of dispersed greenery in agricultural regions has vanished and over one half of all forests was damaged by airborne pollution (Moldan, B. et al., 1990). The biological diversity has been much reduced in whole Czechoslovakia. Some 50 % of fish ranked among endangered species; the same was true with 72 % amphibians, 77 % of reptiles, 62 % of birds, and 65 % of mammals (Juláková, J. et al., 1991). Reparation of such a damage, of course, will take a long time – maybe generations.

The period of environmental enthusiasm lasted two years. Most of the environmental laws that are still effective were enacted during that time. The Czech Ministry of Environment and other important bodies were established, new environmental projects were launched, two National Parks plus four

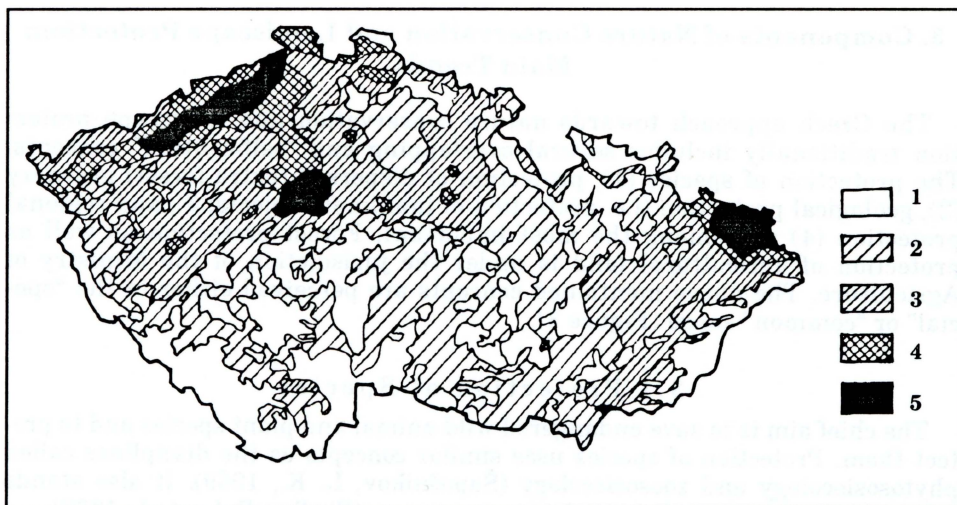


Fig. 1 – Quality of environment (Moldan, B. et al., 1990). Evaluation of the quality: 1 – high (class I), 2 – acceptable (class II), 3 – disturbed (class III), 4 – strongly disturbed (class IV), 5 – extremely disturbed (class V)

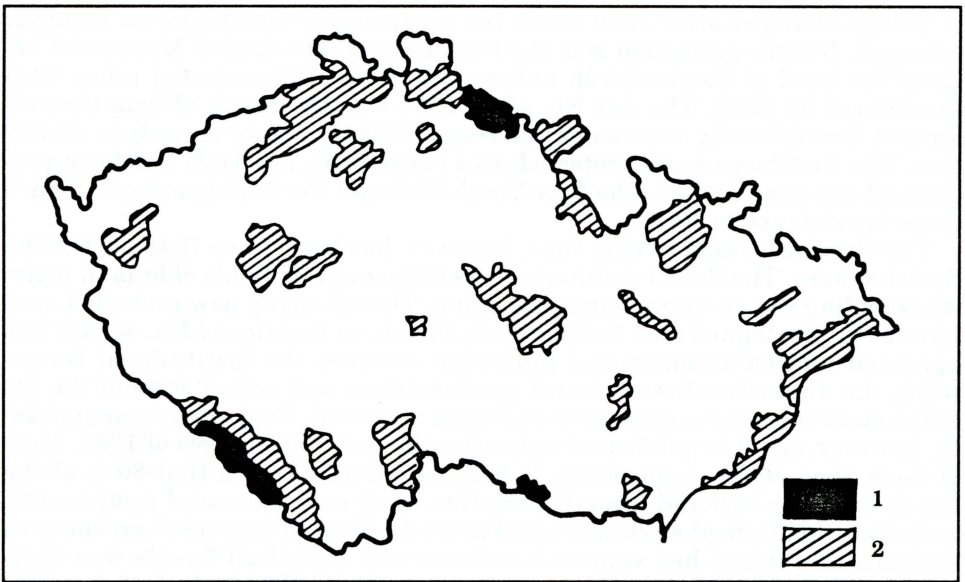


Fig. 2 – National Parks and Protected Landscape Areas in the Czech Republic: 1 – National Parks, 2 – Protected Landscape Areas

Protected Landscape Areas were proclaimed. Czechoslovakia became a member of world and European environmental organizations and signed international environmental conventions.

Environmentally less friendly trends, however, were gradually becoming apparent. Their character is defined by the unbalanced stress put on the economic aspects of transition and on the concept of sustainable development.

### 3. Components of Nature Conservation and Landscape Protection: Main Trends

The Czech approach towards nature conservation and landscape protection traditionally includes several overlapping and “self-centred” concepts. The protection of species (1), protection of dispersed (extra-forest) greenery (2), geological protection (i.e. protection of inanimate objects; 3), and regional protection (4) are among the most important. Forest protection as well as protection of agricultural land is under the jurisdiction of the Ministry of Agriculture. The above mentioned concepts are perceived either in the “special” or “common” sense (Figure 3).

#### 3.1 Protection of Species

The chief aim is to save endangered wild animal and plant species and to protect them. Protection of species uses similar concepts as the disciplines called phytosociology and zoosociology (Šapošnikov, L. K., 1969). It also stands close to conservation biology in the western sense (Fiedler, P. L. et al., 1992).

The number of animal species in former Czechoslovakia has been estimated at 41,000 (99 % are invertebrates). There are some 3,000 of multicellular plants.

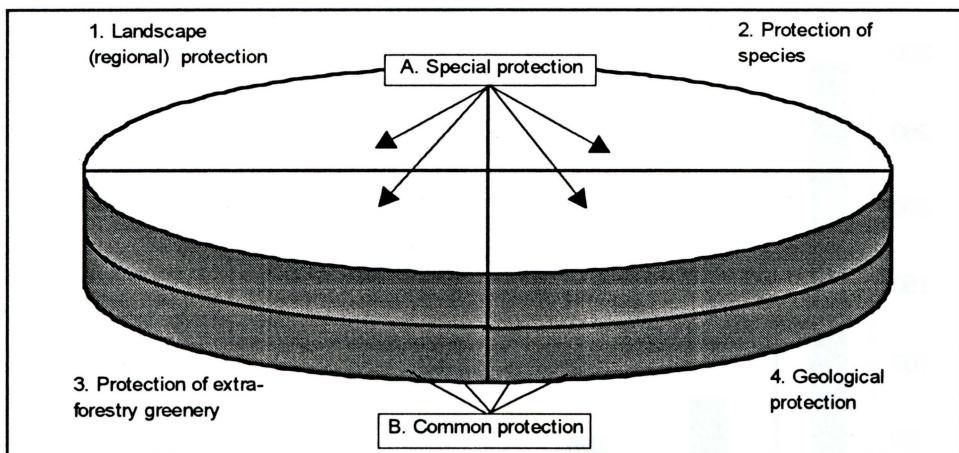


Fig. 3 – Nature protection in the Czech Republic: A – special protection, B – common protection; 1 – landscape (regional) protection, 2 – protection of species, 3 – protection of extraforestry greenery, 4 – geological protection

The biological diversity has been much reduced in Bohemia and Moravia mainly due to degradation and destruction of habitats, excessive exploitation of some wild plants and animals, introduction of alien species, and to some extent also due to extinction by purpose. Among the systemic measures taken by the bodies concerned with protection of species have been the so-called Red Books and Red Lists, appropriate legislation, cooperation with regional conservation bodies (see further text) and also special conservational tools such as rescue programmes, species reintroduction, habitat reconstruction, etc. It also includes growing and breeding of endangered species *ex situ*, and – last but not least – purposive ecological education (Čeřovský, J. et al., 1988).

At the moment the “Red List” includes an overwhelming majority of all endangered species in the Czech Republic. Three Red Books out of five planned have already been published (Sedláček, K. et al., 1988, Baruš, V. et al. 1989, Škapec, L. et al., 1992). The Red Book of non-flowering plants will soon be released in Slovakia; the volume dealing with flowering plants, however, is still missing.

There has been a lot of progress in the legislative field recently. The out-of-date laws were replaced by new ones. This was the case of Act No. 40/1956 on the state environmental protection and related regulations that were substituted by the Act No. 114/1992 (nature conservation and landscape protection) and by the Czechoslovak Ministry of Environment Regulation No. 395/1992. The latter lists among others also all specifically protected plant and animal species. As regards the quantity, there is a clear progress in terms of numbers: 526 plant species are legally protected now instead of previous 108; 293 animal species instead of 174. The so-called general protection of species became part of the legislative system: all wild plants and animals are automatically protected unless a legal exception is made. The category of “specifically protected species” has replaced “protected species”. Species are grouped into three subcategories according to the level of endangerment (endangered, specially endangered, and critically endangered species). The protection of species should be more closely linked to the regional protection and both should become more effective.

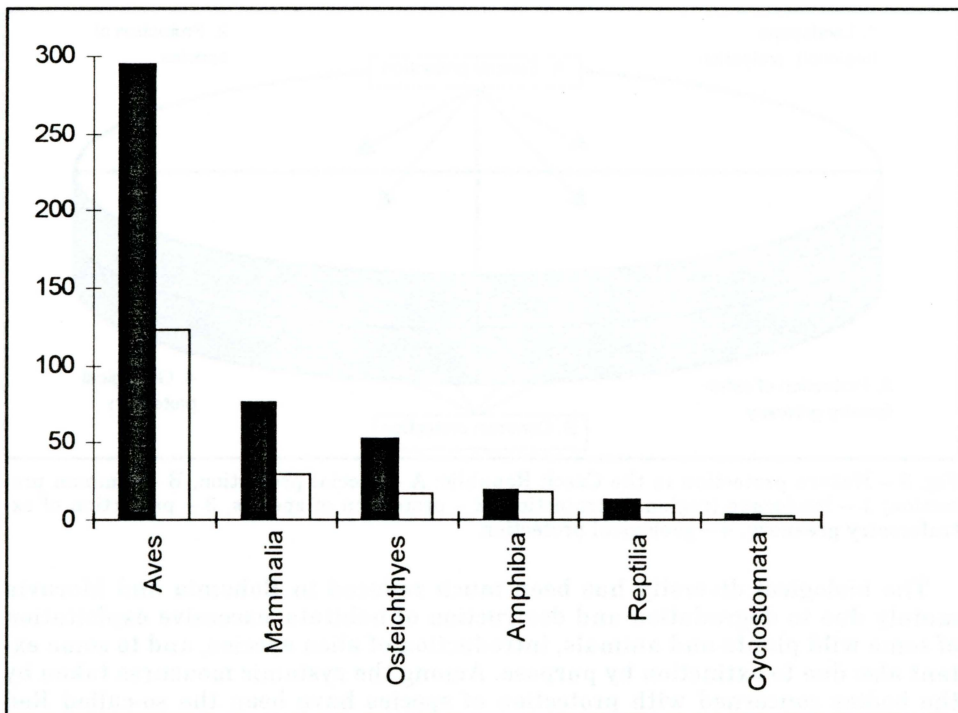


Fig. 4 – Number of Czech and Slovak vertebrates and number of endangered vertebrates (Czech Ministry of Environment Decree No. 395/1992). 1 – total number, 2 – number of endangered species

Let us mention some successful programmes managed by the species protection bodies. These include protection of oligotrophic river courses and the populations of pearl-oyster (*Margaritifera margaritifera*), and *Formica* programmes. Several animals have been reintroduced: beavers (*Castor fiber*) in Central Moravia, lynx (*Lynx lynx*) in the Šumava Mts., and eagle (*Haliaeetus albicilla*) in South Bohemia.

### 3.2 Protection of Dispersed Greenery

Dispersed (extra-forest) greenery includes all autotrophic plants, namely trees and shrubs that grow outside forests. A long-time and well-founded tradition of dispersed greenery protection in the Czech Republic exists: the Czech landscape has been intensively exploited over centuries and man-induced hazards are high. However, 240,000 hectares of grassy field boundaries, 20 % of meadows and pastures, 4,000 km of ribbon greenery, and 3,600 hectares of dispersed greenery have disappeared from the agricultural regions over the past few decades. This has happened mostly due to the amalgamation of fields and other “rationalizing” measures taken by the socialist agricultural policy. The old Act No. 40/1956 was too weak to reverse these trends; moreover it was most probably not intended to do so. The Regulation No. 142/1980 (concerning “details of protection of trees growing outside forests”) could bring a partial help only. It had to be corrected by the Czech Ministry of Culture short time later by a special recommendation.

The current legislation concerning the protection of dispersed greenery is based on the obligatory protection and care of trees by all landowners. Clearance is prohibited unless a precisely defined exception is issued. A new category of "monumental trees" came into existence. These trees are officially recorded by conservational bodies and their protection zone is defined.

The protection of dispersed greenery should be separated neither from the protection of species nor from the regional protection (see further text). Among the species enjoying special protection are for instance the critically endangered mountain ash (*Sorbus sudetica*), five types of willows (*Salix* sp.), and the almond tree (*Amygdalus nana*).

### 3.3 Geological Protection

The Czech Republic has extremely varied geological and geomorphological conditions. The country is bisected by the boundary separating old Hercynian formations from the more recent Alpine structures. In more detailed terms this line divides the Czech Massif from the Carpathian Mountains. The complicated natural history has resulted in a remarkable diversity of rock types as well as in a diversity of surface and underground formations. The central part of the Czech Massif is the oldest region within the Czech Hercynian area. It contains the Moldanubicum and the Barrandien-Iron Mountains Zone internationally known for rich fossils finds. The latter has been named after Joachim Barrande, French geologist who thoroughly researched this area in the 19th century. The international boundary between Silurian and Devonian rocks has been determined there.

Geological protection has naturally much to do with the regional environmental protection. Most valuable parts of the inanimate nature enjoy legal protection. Various degrees of protection exist within the whole network of such protected areas. Under the old legislative system these small-scale areas were called Protected Natural Elements. At the time being there are Natural Monuments and National Natural Monuments (see further text).

Geological protection in the Czech Republic has two basic levels. First, it is the above mentioned network of protected areas focused on the inanimate nature. Second, the permanent and complex care of inorganic structures is also important. Especially the latter is much determined by the quality of environmental legislation and standards and also by some efforts that are often contradictory to environmental concerns (Mining Act No. 44/1988, etc.).

Though the general geological protection lacked precise standards in the past, at the present time there are two groups of inorganic structures that are legally protected everywhere with no exceptions. These include all palaeontological finds and natural caves and underground hollows. As regards the specialized geological protection (Act No. 114.1992), a list of protected minerals is expected to be compiled. Such a list would be an analogy to the specially protected animal and plant species (see Protection of Species); however, it has not been published so far. There are even no signs of preparatory works.

### 3.4 Regional Protection

As noted above the regional protection of nature and landscape needs to be complex, effective, and the system must make sense. The traditions of Czech regional environmental protection have been also already mentioned. By Central European standards the current state of regional environmental pro-

Table 1 – National Parks (NP) and Protected Landscape Areas (PLO) in the Czech Republic

| Name of area        | IUCN management category | Status | Area (ha) | Year notified |
|---------------------|--------------------------|--------|-----------|---------------|
| Český ráj           | V                        | PLA    | 8646      | 1955          |
| Moravský kras       | V                        | PLA    | 8545      | 1956          |
| Krkonoše            | V                        | NP     | 36300     | 1963          |
| Šumava              | V                        | PLA    | 99752     | 1963          |
| Jizerské hory       | V                        | PLA    | 35002     | 1967          |
| Jeseníky            | V                        | PLA    | 73689     | 1969          |
| Orlické hory        | V                        | PLA    | 20410     | 1969          |
| Žďárské vrchy       | V                        | PLA    | 70881     | 1970          |
| Český kras          | V                        | PLA    | 12458     | 1972          |
| Labské pískovce     | V                        | PLA    | 32474     | 1972          |
| Beskydy             | V                        | PLA    | 117319    | 1973          |
| Slavkovský les      | V                        | PLA    | 61896     | 1974          |
| Kokořínsko          | V                        | PLA    | 26726     | 1976          |
| Křivoklátsko        | V                        | PLA    | 63346     | 1978          |
| Podyjí              | V                        | PLA    | 10300     | 1978          |
| Třeboňsko           | V                        | PLA    | 70695     | 1979          |
| Bílé Karpaty        | V                        | PLA    | 71291     | 1980          |
| Blaník              | V                        | PLA    | 4057      | 1981          |
| Blanský les         | V                        | PLA    | 21235     | 1989          |
| Litovelské Pomoraví | V                        | PLA    | 9600      | 1990          |
| Broumovsko          | V                        | PLA    | 41000     | 1991          |
| Podyjí*)            | II                       | NP     | 6300      | 1991          |
| Poodří              | V                        | PLA    | 8150      | 1991          |
| Šumava*)            | II                       | NP     | 68520     | 1991          |
| Železné hory        | V                        | PLA    | 38000     | 1991          |
| total               |                          |        | 1016592   |               |
| average             |                          |        | 40663,7   | 1976,36       |

\*) inside PLA area

tection in the Czech Republic can be judged as an average or under-average one though some quantitative data show high values (Čihař, M., 1995 a, b). One has to keep in mind, however, the vast devastation of the natural and living environment (Figure 1). The effects of current rapid economic development and the consequences of land privatization have been so far often negative. Many protected areas are under threat of the mining activities (Protected Landscape Areas České Středohoří and Český ráj). In most protected areas there are actual or potential conflicts with recreational functions.

The new legislation has brought several new aspects into the regional environmental protection. First, the concept and tools of general regional protection of nature have been defined; second, the existing network of specially protected areas (so-called special regional protection of nature) has been re-structured and rules have been clarified.

The Regional Ecological Stability Systems (RESS; Czech analogy to the West European ECONET – Míchal, I. et al., 1991) became effective tools of the general regional protection. In the future REBSs are expected to become

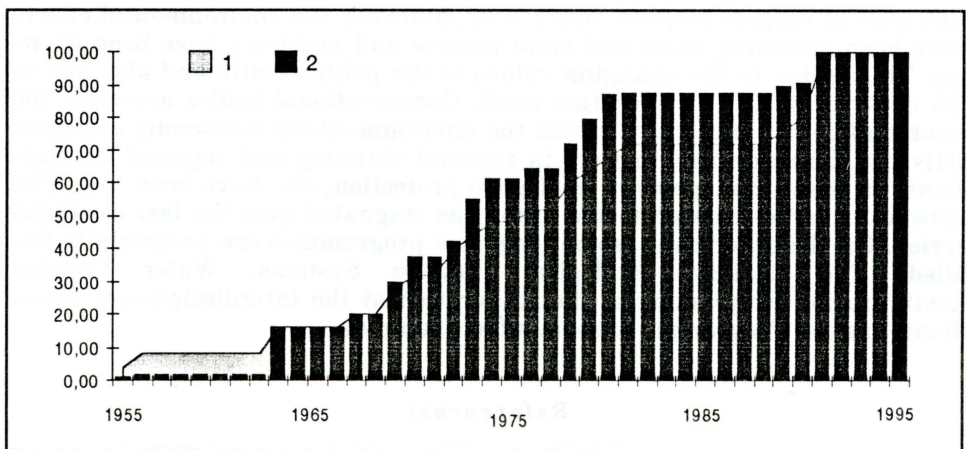


Fig. 5 – Relative number and area of National Parks and Protected Landscape Areas; axis x – year notified, axis y – % of actually value; 1 – number, 2 – area

an obligatory part of all planning documents at all levels. The system of “Important Landscape Components” (ILC) also enjoys legal protection. ILCs are either protected automatically on the basis of the Nature and Landscape Protection Act (forests, bogs, water courses, etc.) or are registered by the respective conservational bodies. The latter case includes the “landscape character”, natural parks, and temporary protected areas.

The legal tools in the field of general regional protection are appropriately complemented by some complex and long-termed environmental projects such as the Water Courses Revitalization Programme or Rural Revitalization Programme. These projects are mostly backed by the state and by the State Environmental Fund.

There have also been changes in the field of special regional protection. Eight categories of protected areas existed in the past (National Parks, Protected Landscape Areas, State Natural Reserves, Protected Finding Places, Protected Parks and Gardens, Protected Scientific Areas, Protected Natural Features, and Protected Natural Monuments). These have been substituted by a simplified system consisting of six types of so-called specially protected areas. National Parks and Protected Landscape Areas have survived as typical large-scale protected areas (Table 1, Figure 5). Apart from these there are four types of small-scale protected areas in the time being: National Natural Reserves (113), Natural Reserves (99), National Natural Monuments (454), and Natural Monuments (988). In spite of large numbers, the total extent of small-scale protected areas makes up less than 1 % of the Czech Republic.

#### 4. Conclusions

The Czech nature conservation and landscape protection won a number of important victories soon after the political change of 1989. New environmental bodies were created, many environmental laws became effective, two National Parks were proclaimed, the Czech Republic became a member of important international organizations, signed international conventions and



took part in various projects. Since 1992, however, the environmental efforts have been becoming more and more passive and problems have been growing. This is due to the changing values of the political elite and also due to the decay of nature conservation itself. Conservational bodies are often too weak and do not effectively oppose the environmentally unfriendly economic activities. Some decisive powers in regional planning and regional development, in forest management, geological protection, etc. have been lost. The network of large-scale protected areas has stagnated over the last electoral period. On the other hand, some long-time programmes are successfully fulfilled. The Regional Ecological Balance Systems, Water Courses Revitalization Programme or the cooperation at the interdisciplinary Rural Revitalization Programme are just a few examples.

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#### Shrnutí

### OCHRANA PŘÍRODY A KRAJINY V ČESKÉ REPUBLICE

Ochrana přírody a krajiny má v České republice mnohaletou tradici. Po metodologické, odborné i legislativní stránce patří k dobře zajištěným součástem environmentální sféry. Mnohé ukazatele a charakteristiky jejího aktuálního stavu odpovídají standardům aplikovaným ve státech západní Evropy, v řadě případů se blíží požadavkům trvale udržitelného rozvoje.

V důsledku zásadních politicko-hospodářských přeměn po druhé světové válce a pak na přelomu osmdesátých a devadesátých let (pád „železné opony“ mezi Východem a Západem) docházelo a dochází k významným pnutím mezi potřebami hospodářského rozvoje a prioritami citlivého přístupu k přírodě a krajině. To se muselo nutně projevit na kvalitě celkové environmentální situace státu, ochranu přírody a krajiny nevyjímaje (Moldan, B. et al., 1990).

K nesporným pozitivům posledních několika let patří vlastní etablování environmentálního reortu, jehož je dnes ochrana přírody a krajiny nedílnou částí. Dále připomeňme přijetí progresivních legislativních norem, uskutečňování celoplošných programů tzv. územních systémů ekologické stability, revitalizace říčních toků, program „obnovy vesnice“, péče o krajinu nebo řadu drobnějších a vesměs lokálně nebo regionálně úspěšných projektů na

ochranu a rozvoj biologické diverzity. Z širšího pohledu jsou pro českou ochranu přírody velkým pozitivem veškerá zlepšení, vykazovaná v ostatních složkách životního prostředí, například v ochraně ovzduší, ochraně podzemních a povrchových vod nebo v odpadovém hospodářství.

Kriticky lze hodnotit liknavost, nepružnost a nedůslednost některých přijímaných opatření a postupů na nejrůznějších správních úrovních, podobně tak i omezenou schopnost kompetentních orgánů a struktur při jejich prosazování. Bolestná byla zejména ztráta některých klíčových kompetencí (např. územní plán). Právě ve složitých transformačních podmínkách mohou taková "zaváhání" přinášet negativní a často nezvratný efekt.

Obr. 1 – Kvalita životního prostředí (Moldan, B. a kol., 1990). Životní prostředí: 1 – vysoké kvality (třída I), 2 – přijatelné kvality (třída II), 3 – porušené (třída III), 4 – silně porušené (třída IV), 5 – extrémně porušené

Obr. 2 – Národní parky a chráněné krajinné oblasti v České republice: 1 – národní parky, 2 – chráněné krajinné oblasti

Obr. 3 – Ochrana přírody v České republice: A – speciální ochrana, B – obecná ochrana; 1 – ochrana území, 2 – druhová ochrana, 3 – ochrana mimolesní zeleně, 4 – geologická ochrana

Obr. 4 – Počty taxonů českých a slovenských obratlovců a počty zvláště chráněných taxonů obratlovců podle vyhlášky MŽP ČR č. 395/1992 Sb. 1 – celkový počet, 2 – počet zvláště chráněných druhů

Obr. 5 – Relativní počty a relativní rozlohy velkoplošných chráněných území v České republice; osa x – roky, osa y – hodnoty v %; 1 – počet, 2 – rozloha

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