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BUREAU OF THE COMMITTEE
FOR THE ACTIVITIES OF THE COUNCIL OF EUROPE
IN THE FIELD OF BIOLOGICAL AND LANDSCAPE DIVERSITY

BU-DBP

Group of specialists - European Diploma

Dobročský Virgin Forest National Nature Reserve

(Slovak Republic)

APPLICATION

Ministerstvo Životného Prostredia
(Slovak Republic)

COUNTRY:	**SLOVAK REPUBLIC**
NAME OF THE AREA:	**DOBROČSKÝ VIRGIN FOREST**
	NATIONAL NATURE RESERVE
MANAGING AUTHORITY:	Slovak Environmental Agency
	Regional Branch Office
	Lazovná 33
	Banská Bystrica
	SLOVAK REPUBLIC
	phone: 0042-088-754-269, 754 289
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1. TYPE OF AREA

The national nature reserve aimed on protection of the natural environment, flora and biocoenoses specimen which is the example of European natural ecosystems. It is the preserved fragment of the Carpathian natural forest (virgin forest) as an unique specimen of the forest ecosystem in the climax stage of fir-beech altitudinal zone.

2. GEOGRAPHIC LOCATION

The Dobročský Virgin Forest lies at 19° 41′ of the eastern longitude and 48° 41′ of the northern latitude in the Middle Slovakia 6 km to the south of the settlement Dobroč near Čierny Balog and 15 km to the south-east of Brezno. It is situated on north-western slopes of the Brôtovo Valley closure at 700 - 1 000 m above sea level. According to regional geomorphological division of Slovakia it is included within the province *Western Carpathians* and the subprovince *Internal Western Carpathians* into the area *Slovenské rudohorie Mountains,* the orographic unit *Veporské vrchy Mountains* and its sub-unit *Balocké vrchy Mountains.* The outline of the area in the scale 1:50 000 to be found in the Appendix 1.

3. DESCRIPTION OF THE AREA

The bedrock is formed of Slovak rudohorie crystalline rocks, slaty granites, granodiorites and quartz diorites. The climate is cold (average annual temperatures 5,4-6,5 °C)and wet (average annual precipitation is 760 to 920 mm). Prevailing soils are brown ones. The national nature reserve belongs to fir-beech altitudinal zone with prevailing fir-beech forests. Beech-maple forest, beech, fir-beech with maple, beech-fir and ash-alder forest is not so frequent. Herb layer can be characterized by following species: *Oxalis actosella, Maianthemum bifolium, Athyrium filix-femina, Sanicula europea, Dryopteris filixmas, Impatiens noli-tangere, Mercurialis perennis, Dentaria enneaphyllos, Senecio fuschii, Senecio nemorensis ssp. jacquinianus, Geranium robertianum, Urtica dioica* etc. These species are characteristic ones, without the occurrence of more significant and attractive species.

Main wood species which form the stand composition are: European silver fir, common spruce, European beech with the addition of maple (*Acer carpinifoilum),*

common European ash and exeter elm. All developmental stages are present there penetrating each other in fancy mosaic on the area and affecting characteristic appearance of single parts of the protected area. All cycle of evolution of the virgin forest lasts 400 ears. The fir lives to see 450 years, the spruce 350 and the beech 250 years. The number of firs is constantly decreasing during last 50 years in favour of spruce and particularly beech which occupies excessively especially lower layers where fir still prevailed in 1935. Rejuvenation of fir stagnates for that moment. The average standing crop of the virgin forest (720 - 750 m^3 per 1 ha) is not falling inspite of the loss of fir. It is the evidence of equilibrium in the areal share of evolutionary stages corresponding to their time share in the duration of the whole cycle of evolution.

Except for multilayer structure typical of virgin forests which can be observed especially in the original core of the reserve single-layer structure occurs, too, in some more or less homogeneous spruce covers which were added later.

The visitor in the Dobročský Virgin Forest is attracted namely by the presence of bulky trees.In 1964 the windstorm broke down so called "thick fir" cca 450 - 500 years old which had 193 cm in diameter, its height amounted to 56 m, the volume 54,9 m^3 of wood and weighted 38 t. The torso of trunk 6 m high reminds it today. The biggest tree was the fir 58 m high, so called "big fir". It was 156 cm thick and its volume of wood was 39,96 m^3. The fir desiccated in 1984. As regards spruce, the biggest one was 137 cm thick and 54 m high. The maximum thickness achieved among beech trees is 118 cm, among maple trees 135 cm, elm 95 cm and ash 64 cm. In the original core of the reserve there are 170 trees thicker than 100 cm (123 fir trees, 42 spruce trees, 10 beech trees and 5 maple trees) and 13 trees thicker than 130 cm (10 fir trees, 2 spruce trees and 1 maple tree).

The Dobročský Virgin Forest was attacked by bigger wind disaster in 1931 and 1964 ("thick fir" broken down) but these winds did not caused more extensive damages. Spruce stand adjoined to the reserve in later period was attacked by wind in 1978. The virgin forest was partially touched by bark beetle calamity which occurred in its surroundings in 1949-1951 but without any significant damages. The virgin forest proved itself as an effective barrier against the further spread of bark beetle.

Fauna of the Dobroch Virgin forest is also interesting but it was not examined more comprehensively. Deer occurs there, beasts of prey such as bear, lynx, wildcat, marten. The group of birds is also abundant. Small terrestrial mammals, reptiles, amphibians, mollusc and insects are also remarkable. As regards invertebrate e.g. the presence of the Western Carpathian endemic species *Tatrasoma carpatica* has been recorded.

Scientific values are given by the possibility of evolutionary and growth relations research of the original climax forest ecosystem not violated by human activity. Scientific attention is paid to the area for 50 years.

Hatiar performed the first forest taxonomic inventory in 1935. He also measured the Dobročský "thick" fir. Hatiar also performed detailed measurement and the evaluation of gains for last 30 years (1964) when the fir had been broken down by windstorm.

The purposeful research of stands has started since 1948 when 6 permanent research areas (hereafter PRA) were established on the initiative of Leinbundgut in co-operation with Biskupský. Partial results were published by Leinbundgut (1959). The results of repeated measurement on these areas from 1958 are given in the final report of Kusák (1960).

One-shot measurements aimed at the study of the virgin forest structure were performed under leadership of Polanský from Agricultural University in Brno. Pelíšek (1957) characterized soil conditions of the Dobročský Virgin Forest, Katlaba and Pouzar (1962) studied mushrooms.

The differentiation of the basic types of forest phytocoenoses according to Zlatník's typological school was realized under Randuška's leadership in 1961 and resulted in the first typological map of the Dobročský Virgin Forest. Randušková (1964) dealt with the determination of relations between evolutionary stages of the Dobročský Virgin Forest and the types of basic phytocoenoses. Typological relations were presented by Randuška (1967) in the publication The Dobročský Virgin Forest.

Priesol (1965) presents trunk analyses of fir and spruce from the Dobročský Virgin Forest. The study of structure, growth and gain of the virgin forest on 6 PRA based in 1965 were evaluated by Priesol in his final report (1966). Priesol (1967) also describes the structure and the development of the virgin forest as well as its production capabilities in the publication The Dobročský Virgin Forest. Korpeľ dealt with similar long-term studies of the structure and the growth of surficials, growth and production conditions as well as processes of reproduction of the Dobročský Virgin Forest. He realized regular measurements on PRA based for that purpose in 1958 and used also data from other PRA in the Dobročský Virgin Forest (18 PRA on the total area 10,2 ha). He obtained valuable data also from several full measurements of the virgin forest. He summarized existing results in the publication The Virgin Forests of Slovakia (1989).

The study of the forest geobiocoenose and later added spruce monoculture condition was realized on 2 PRA in the Dobročský Virgin Forest in the years 1973-1975. The results were published by Benko (1978). Holubčík (1976) dealt with the problems of spruce in the nature reserves of the Slovenské rudohorie Mountains.

Húsenica (1980) dealt with mother substrates and their nutrient supply research on the protected areas of the Middle Slovakia district. Bubeliny in his dissertation (1972) evaluated properties of upper soil horizons in the forest types of the Dobročský Virgin Forest. Javora (1973) evaluated microclimate conditions also in his dissertation. Šály and Petrík (1975) dealt with the study of abiotic environment, Petrík and Slávik studied the microclimate of the Dobročský Virgin Forest, Petrík (1983) dealt with the bioclimate, Ciesarík (1982) with the soil micromorphology and Mihálik dealt with accessible forms of some biogenetic elements.

Large scope of knowledge is the result of extensive scientific utilization of the Dobročský Virgin Forest. Hardly any protected area in Slovakia has at its disposal such scope of knowledge.

Ecological values follow from the core function which the biocentre of province significance has in the sense of Supra-regional Territorial System of Ecological Stability in Slovakia.

Aesthetic values consist in picturesque scenery of the colourful mosaic of the whole evolutionary cycle of the forest. Stately, old, exceptionally thick and high trees are extraordinary impressive. They look like supporting columns of this nature temple. But fallen giants the age of which was filled also rouse admiration. Aesthetic impression is amplified by majestic peace of inviolated nature.

Cultural values follow from the fact that the Dobročský Virgin Forest belongs among most important parts of the national natural heritage and it undoubtedly has also international significance.

Recreational values are limited with respect to the protection of the area. There are no recreation centres or facilities in the closest surroundings. The tourist foot-path

across the protected area was closed for the public in 1996. The guidance for field trips is provided by management co-ordinator (Slovak Environmental Agency, Regional Branch Banská Bystrica) and Forest Enterprise in Čierny Balog.

4. JUSTIFICATION OF THE EUROPEAN IMPORTANCE

The example of original inviolated ecosystem of the Carpathian virgin forest on fir-beech level rare in the Central Europe with the development and growth dynamics which fully corresponds to laws of nature without sensible anthropic influence. The wood species fir achieves here extraordinary dimensions (height, thickness, volume) and other wood species and especially spruce also approach these record values.

5. LAND OWNERSHIP

The protected area is owned by the state. It belongs to the original state stock forests. The administrator is the state enterprise "Stredoslovenské lesy Banská Bystrica" through the mediation of Forest Enterprise Branch in Čierny Balog.

6. SYSTEM OF PROTECTION

The Dobročský Virgin Forest was originally declared the nature reserve in 1913, i.e. it is classified as one of the oldest ones in Slovakia. The original area 49,88 ha representing the core of the reserve was in 1972 extended to 101,82 ha and the protective zone to 114,41 ha. Further precising of the reserve's area to 103,85 ha and the protective zone to 100,44 ha follows from the Decree issued by the Ministry of Environment in 1993. In this Decree the conditions of protection applicable also to the Dobročský Virgin Forest Nature Reserve and its protective zone are given.

Under the Act of the National Council of the Slovak Republic No. 287/94 of the Codes on the nature and landscape protection in force from January 1, 1995 is the Dobročský Virgin Forest included into the highest category as the national nature reserve with the most strict level of protection (Appendix 2, page 9 - §17 Nature reserve and page 40 - Nature Reserves in the Slovak Republic, No. 30 - Dobročský prales).

7. PLANNING AND MANAGEMENT

The objectives and measures within the protected area are following:

- to leave the protected area without any anthropic interference in the future,

- scientific research is possible only on the basis of the permission granted by the administration body responsible for nature protection under conditions determined by professional organization in the field of nature protection,

- public access to the protected area is forbidden. Field trips are guided by authorized staff from the Forest Enterprise in Čierny Balog or Slovak Environmental Agency - Regional Branch in Banska Bystrica on the signposted excursion footpath only,

- to redirect the cancelled tourist footpath outside of the protected area,

- to maintain signposting of the protected area and the information board from 1989,

- to direct the management in the protective zone purposefully at the improvement of buffer function in order to prevent from penetration of negative influence from the surroundings to the core area,

- to provide guard service through authorized staff from the Forest Enterprise in Čierny Balog,

- to establish the exhibition "In the Dobročský Virgin Forest" within the area of the Forest Enterprise in Čierny Balog - the location Pod Skalicou in the Brôtovo Valley. The exhibition will be open only to the professional but also to the wide public (within access of the redirected tourist footpath).

- to publish multilingual information booklet on the Dobročský Virgin Forest both for the professionals and other visitors from Slovakia and abroad,

- to organize comprehensive scientific inventory research of the protected area.

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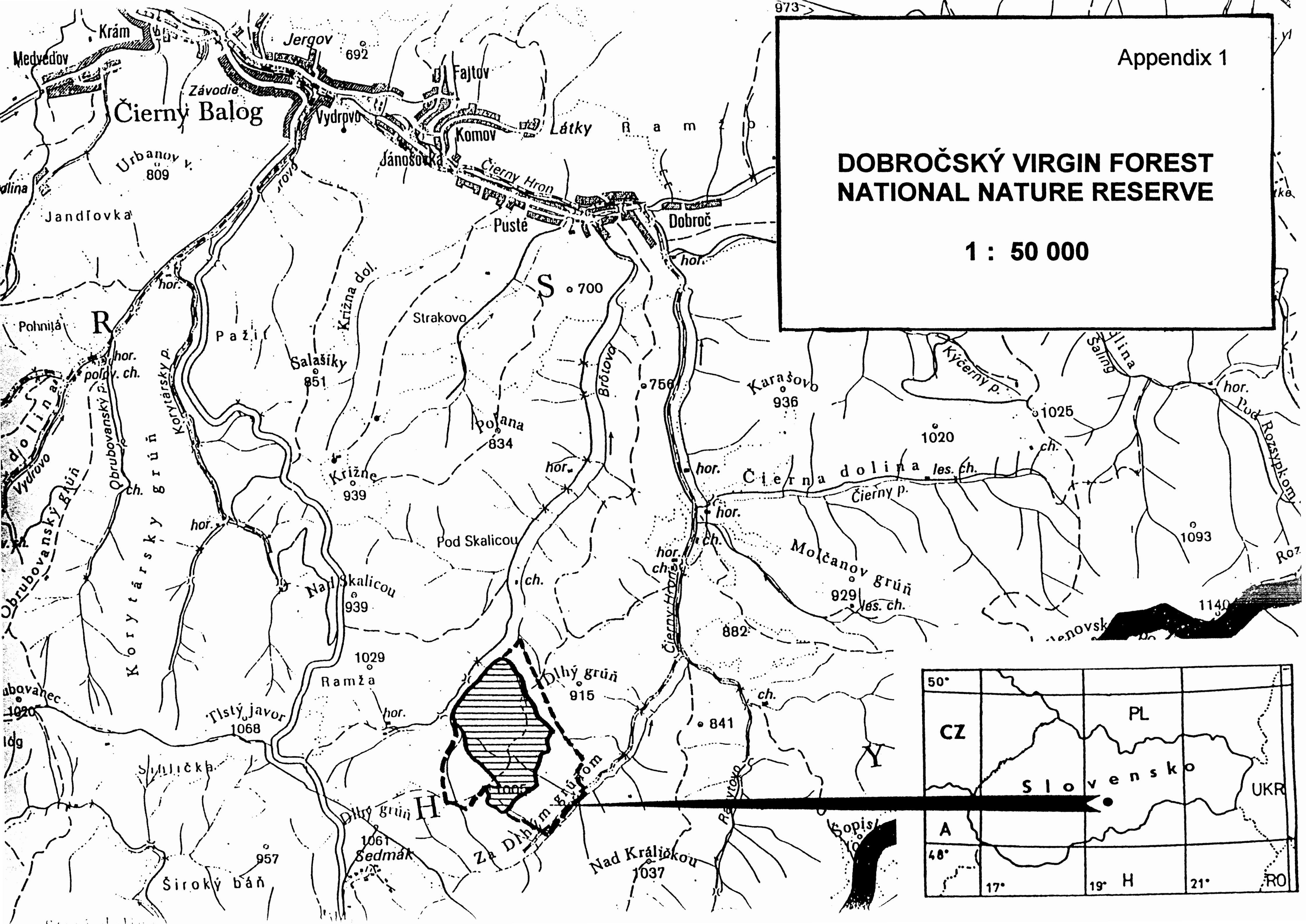
9. PHOTODOCUMENTATION (Appendix 3)

Appendix 1

DOBROČSKÝ VIRGIN FOREST NATIONAL NATURE RESERVE

1 : 50 000



Appendix 2

Act

of the National Council of the Slovak Republic

No.287/1994

on Nature and Landscape Protection

This translation of the Act was supported by the **United States Agency for International Development (USAID)** through a cooperative agreement with the **Harvard Institute for International Development (HIID) Bratislava.**

This English translation of the Act on Nature and Landscape Protection prepared for information purposes only. For legal purpose, please, refer to the Slovak version of the Act.

§ 17
Nature Reserve

(1) A smaller territory, usually up to 1,000 ha representing predominantly original or those ecosystems which are not generally affected by human activity and biocentres, may be designated by the district environmental office under a generally binding regulation as a nature reserve.

(2) The Ministry may designate a nature reserve that usually represents a national biocentrum as part of the most significant natural heritage of the state by a generally binding regulation as a national nature reserve.

(3) In the territory of a nature reserve and national nature reserve the fifth level of protection is valid and the following activities are prohibited

a) activities described in § 16 Section (3) of this Act,

b) influencing forest vegetation, cutting trees and damaging vegetation and topsoil,

c) changing the shape of relief, cultivating and moving soil, providing geological works, mining and other activities using mining methods,

d) grazing and moving of herds of livestock,

e) changing the natural water flows and water areas, swamps, wetlands, springs, and abysses,

f) hunting animals and fish and building troughs and salt-troughs for them,

g) introducing domestic animals and exotic or non-native plant and animal species,

h) building and expanding of objects and facilities that are not used for water protection, soil protection, forest protection and other nature protection purposes,

i) building garden colonies, sport and recreational facilities,

j) installation of information, advertisements and other boards or signs that are not related to nature protection,

k) polluting the area with waste and garbage and the storage of waste, 43)

l) the use of chemicals and fertilizers,

m) entering and parking cars except those used for water protection, soil protection and forest protection, or other nature protection purposes and the administration or maintenance of public use facilities,

n) shipping, prospecting and low-level training flights,

o) walking outside of posted places and trails,

p) lighing fires, smoking, camping, conducting sport and recreational activities, except hiking on nature trails and tourist paths, hiking, rock climbing and alpine skiing in places determined by the nature protection body,

q) disturbing the peace,

r) collecting plants, minerals and fossils,

s) installing facilities for defence and state security, except for state border security.

(4) Activities according to § 14 Section (2) of this Act, when not prohibited by Section (3), require in the areas covered by the fifth level of protection, the approval of the nature protection body.

(5) The nature protection body may prohibit any economic activity which intervenes in ecosystems, their components or elements, which endanger a nature reserve or national nature reserve. It may decide to close the nature reserve to the public or temporarily restrict entry in the case of endangerment by a large number of visitors. The nature protection body is obliged to discuss, in advance, prohibiting or restricting entry with affected municipalities.

(6) The fourth level of protection is valid (§ 16 Sections (3), (4), (5)) in the protective zone of a nature reserve or national nature reserve (§ 12 Section (2)).

(7) If the protective zone of the nature reserve or national nature reserve has not been designated according to § 12 Section (2) of this Act, the third level of protection is valid (§ 14 Section (2)) in the protective zone; and the protective zone is considered to be a 100 meter wide area directly adjacent to its borders.

(8) The details of the conditions of protection of a nature reserve or a national nature reserve, its protective zone and its borders are determined under a generally binding regulation, designating the protected area and its protective zone.