



THE KRKONOŠE/KARKONOSZE TRANSBOUNDARY BIOSPHERE RESERVE



INFORMATION ABOUT THE PROGRAM MAB AND KRKONOŠE/KARKONOSZE BIOSPHERE RESERVE

- UNESCO – The United Nations Educational, Scientific and Culture Organization – established in Paris in 1945 – Czechoslovakia was one of the founder member (the Czech Republic is a member since 1993) – MAB (Man and the Biosphere) is one of UNESCO programmes, declared in 1970 – nowadays there 136 states registered in MAB Programme, 45 of them are from Europe region (EUROMAB), covering also Canada and the USA.
- In the Czech Republic the network of biosphere reserves is created by five territories – Třeboň Basin BR (1977/700 km²), Křivoklátsko BR (1977/628km²), Pálava BR (1986/80 km², since 2003 renamed for Dolní Morava BR/354 km²), Šumava BR (1970/1671 km²), Krkonoše BR (1992/548 km²) and Bílé Karpáty BR (1996/715 km²). In Slovakia there exist Slovenský kras BR (1977), Poľana BR (1990), Tatry BR (1992) a Východné Karpáty BR (1998). In the neighbouring Poland the certification was given to 9 BR's, in Germany 14 BR's, in Austria 6 BR's and in Hungary 5 BR's.
- The Krkonoše/Karkonosze Transboundary Biosphere Reserve (hereinafter BRKK) has existed since 1992, when it represented the first transboundary BR in the world. Prof. Jan Jeník, the chairman of the Czech National Committee at that time and a member of ICC MAB participated significantly in the process of its certification.
- The nature phenomena of BRKK: arctic-alpine tundra, glacial corries, Nordic peat bogs, mountain pine stands, flower-rich mountain meadows, mountain mix and spruce forests, rich representation of endemic and relict flora and fauna; difference in altitude of the mountains from 300 up to 1 602m above the sea.
- The most famous glacial relicts of the Krkonoše Mountains are (from the plants): Cloudberry, Sudetic Lousewort, Alpine Saxifrage and from the animals dragonflies, Somatochlora alpestris and Aeschna coerulea; birds: Dotterel, Redpoll, mammals: Field Vole. Among endemics of the Krkonoše Mountains there are two tens of different species of hawkweeds, Sudetic Rowan or Bohemian Bellflower and from animals there is mayfly Rhithrogena corcontica or the geometer moth Psodos quadrifarius sudeticus.
- The cultural and historical phenomena of BRKK: architecture of wooden log cabins, ethnographic documents from the period of farming (18.–19. Century), representative network of regional museums (on both sides of the mountains there are about 30 museums), religious and culture sites, rich regional literature describing almost one millennium of the human presence in the Krkonoše Mountains, a symbolic person of Krakonoš (Rübezahl) and its interpretation in literature and arts.
- People in the Krkonoše Mountains (Czech/Polish side): there is 50 000 inhabitants living in the territory, 26/18 cadastres of towns and villages, in I. zone of KRMAP/KPN there are year-round 8/9 mountain chalets in operation, the total length of tourism roads is 800/117 km, number of visitors (person-days) annually reaches 6/2,5 million, totally in both sides of the Krkonoše Mountains there are 20 downhill ski areas, 141 km of ski slopes, 19 cable ways, 129 ski lifts with the total transport capacity about 120 thousand people/hour.
- What is necessary to deal with in BRKK: gradual reconstruction of mountain forests damaged by emissions, using mainly natural processes of its renovation, providing consistent care of Krkonoše mountain meadows, universal support of soft forms of tourism (ecotourism), constant progressive participation of all the administrators of the Krkonoše Mountains in realization of Krkonoše 2050 Vision principles.



Glacial lakes Wielki and Mały Staw in the Eastern Krkonoše

UNESCO Biosphere Reserve on the Czech-Polish boundary

The unique natural, cultural and historical values of the Krkonoše Mountains, the highest mountains in the Czech Republic, situated along the northern Czech-Polish border, have been known for centuries. The long-term effort to protect them led to declaration of Karkonoski Park Narodowy at the Polish side in 1959 and the Krkonoše Mountains National Park at the Czech side of the mountains in 1963. Since 1992 the Krkonoše Mountains have been included into the

World Network of UNESCO Biosphere Reserves within program Man and the Biosphere (MAB). Therefore the acronym MAB has appeared with the names of both parks. Most of the visitors of the Krkonoše Mountains do not know much about this worldwide program and therefore some education is necessary. This publication brings a set of information about the purpose and mission of UNESCO biosphere reserves in the worldwide and regional context.



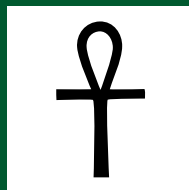
Residues of snow patches in glacial corries Velká and Malá Kotelní jáma sharply contrast with spring landscape around Benecko

UNESCO and Man and the Biosphere Programme

The United Nations Educational, Scientific and Cultural Organization (UNESCO) declared a rationally composed intergovernmental program of ecological cooperation in the planetary scale in 1970. It was named Man and the Biosphere and its acronym then became a symbol of the integrated approach in the protection of nature and in quality environment

care. Among its 14 projects, dealing with different biomes of the world and with interaction of man and environment, the most famous one created was MAB Project 8, focused on conservation of natural areas and of the genetic material they contain. Thus the project of the Worldwide Network of UNESCO Biosphere Reserves was created. Man and Biosphere

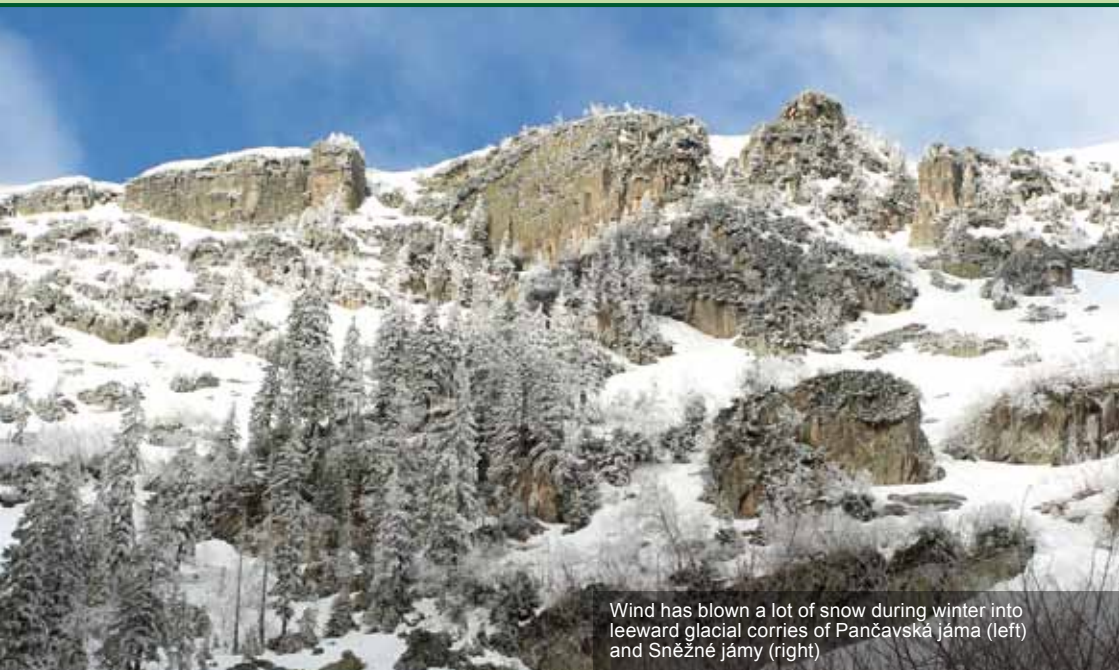
programme has its headquarters in Paris and it coordinates the activity of national committees of the countries that have joined the programme (also the former Czechoslovakia has belonged to it since 1974). Today there are 136 sovereign countries registered in MAB Programme and the Worldwide Network of Biosphere Reserves is created by 563 places in 110 countries on five continents. Six Czech and four Slovak biosphere reserves belong to them.



In the sign of MAB a magic symbol of life was used, „ankh“ used by the old Egyptians. The coloured ribbon represents the main environments on the Earth – water, forests and meadows, mountains, deserts

Orientation board belong to the common equipment of BRKK





Wind has blown a lot of snow during winter into leeward glacial corries of Pančavská jáma (left) and Sněžné jámy (right)

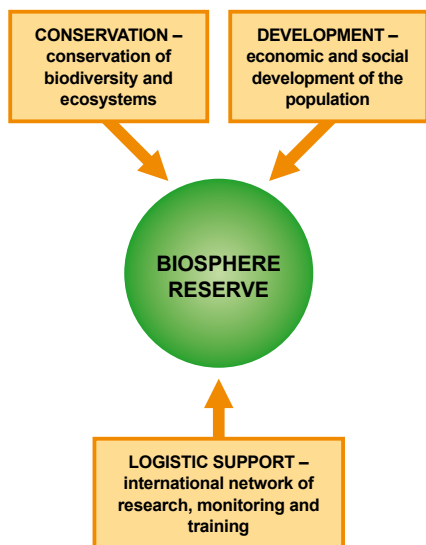
What is a biosphere reserve?

Framework regulations of the biosphere reserve (BR) have been developed. They must be met when a biosphere reserve is being chosen and declared.

BR's worldwide net should gradually sufficiently represent all the basic biomes of the Earth and it should cover the diversity of its civilization burden.

EVERY BR MUST CONTAIN:

- Representative examples of the main biome (e.g. tundra, steppe, temperate forest...).
- Examples of the extraordinary or unique ecosystems or plant and animal species.
- Examples of harmonic utilization of nature sources by the local population.
- Examples of degraded nature that needs rehabilitation.



BR BASIC FUNCTIONS

For all the BR's three basic functions are obligatory, which complements one another, as follows:

1. **Protection of nature and culture diversity,**
2. **Support of constantly sustainable economic and demographic development,**
3. **Logistic support of the environmental education, research and monitoring.**

Each BR must have an adequate legal protection and also an adequate spatial classification for several zones with different stage of nature protection and human activities:

- **Core zone** – it provides with legal protection of nature to keep biodiversity and opportunity for development and monitoring ;
- **Buffer zone** – it neighbours with the core zone, protecting it and it is used for human's activities that do not damage biodiversity of the area;
- **Transition zone** – it covers local inhabitants' activities of forestry or agriculture and it is the place where parties involved try to bring the economic and conservation aims nearer and to participate in constantly sustainable care of the area.

Biosphere reserves present

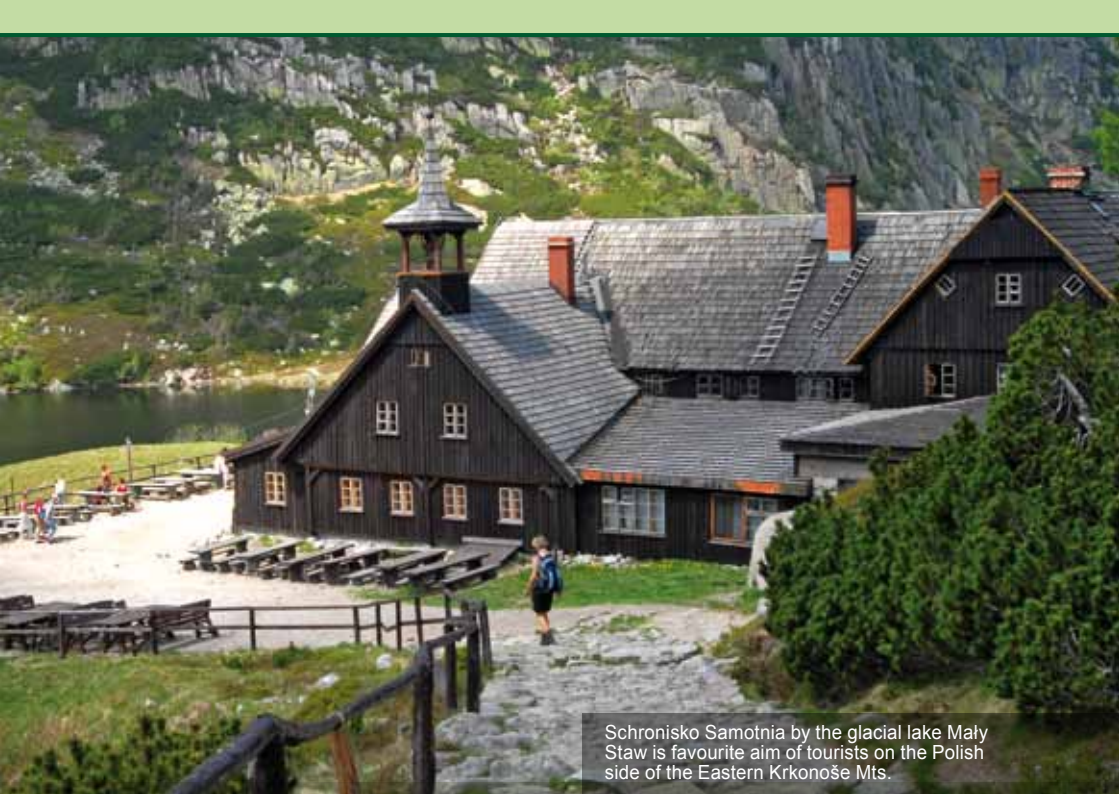
On the basis of the above mentioned framework regulations the National committee submits nomination proposal through the national government, which is evaluated by MAB International Coordinating Council (MAB ICC). Each BR must fulfil the minimum set of criterions before being adopted into the international network and its declaration must be supported by the approval of significant subjects of relevant area (local self-government, entrepreneurs, state administration etc.). In this manner six Czech and four Slovak

biosphere reserves were nominated and declared during 1977–1998. The nomination is not permanent but every 10 years it is evaluated if the administrators of the area fulfill all declared aims of UNESCO Biosphere Reserve.



Orientation signs and net of the terrain information centres are basic components of BRKK tourist infrastructure





Schronisko Samotnia by the glacial lake Maly Staw is favourite aim of tourists on the Polish side of the Eastern Krkonoše Mts.

BIOSPHERE RESERVE IN THE CHANGING WORLD

At the 2nd and 3rd World congress of BR's in Seville and Madrid (1995 and 2008) the basic documents were created, determining the worldwide development of World Network of BR at the beginning of the 21st century – Seville strategy and Madrid action plan of BR arising thereof (2008 and 2013). It suggests new aims and tasks, responding to

- Accelerated climate's changes which have impact on the society and ecosystems.

- Ongoing urbanization affecting environmental changes.
- Decline of biological and cultural diversity, decreasing the ecosystems' ability to provide services for mankind welfare.

In this respect the biosphere reserves have their non-replaceable role in looking for balance between the human's responsibility for nature conservation and its diversity and the need to use the nature sources for social and economic welfare of mankind.



History of the Krkonoše/Karkonosze Biosphere Reserve

Since the beginning MAB Czechoslovak National Committee has been trying to choose the Czech and Slovak territories that would meet the concepts of BR from 70's of the 20th century. So in 1977 the Třeboň Basin BR and Křivoklátsko BR were declared, despite a lot of legislative problems of the organization of our state at that time. Only much later they started to think about nomination of KRNAP and TANAP into the

net of BR, mainly due to the fact, that both national parks fulfilled both nomination criterions of that time, particularly the legislative framework, zoning of the territory, extensive research activities and considerable anthropogenic impact on the territory, asking for remedy (in Krkonoše Mountains there impacts of emissions and the extensive attendance. From the International Conference Parks-Pollution-People, taking place



There is net of mountains side ridges, running out in the southern direction from both main Krkonoše ridges, which are typical for character of the Czech side of the Krkonoše

in 1990 under direction of IUCN, EUROPARC Federation and KRNAP Administration, the resolution has arisen, recommending Krkonoše Mountains to be nominated into the World Network of BR. After two years the nomination documents were ready, approved in the MAB headquarters and in 1992 Krkonoše were incorporated into UNESCO World Network of Biosphere Reserves as the Krkonoše/Karkonosze Transboundary Biosphere Reserve. A great merit of the successful



nomination is made by Prof. Jan Jeník, the doyen of Krkonoše science and the first chairman of MAB Czechoslovak National Committee.

Mountain of the extraordinary values

Bio-geographical position of the Krkonoše Mts. in the middle of Europe makes from these small middle-mountains an example of extraordinary varied territory, considering its natural, cultural and historical entities. They belong to one of the best investigated European mountains and they are legible testimony of almost thousand years lasting confrontation of people and mountains nature. They provide a great many of the

sensitive, but still exploitive approach to the nature sources utilisation.



Log cabins or wooden small church Wang belong to the wealth of Krkonoše alike Blue troth, Scarce Copper or Willow Gentian. Its stylized flower creates KRNAP logo





Divčí kameny (tors) on Slezský ridge document a long term weathering of Krkonoše granite





Úpské rašeliniště (Úpa peatbog) in the core zone of BRKK is filed into the list of the most significant world wetlands (Ramsar convention) and it is a document of natural development of Krkonoše nature. Meadow enclaves in the valley of the Úpa River represent on the other hand the character of the BRKK buffer zone

Differences between a biosphere reserve and a national park

In the Czech legislative the National Park (hereinafter NP) management is entrusted to an institution the founder of which is Ministry of the Environment of the Czech Republic. The relevant legal standards govern the range of competences of KRNAP Administration, territory zoning and forms of the individual zones

utilisation. On the contrary BR has not been sufficiently specified in the legal system yet in Code no. 114/1992 Coll. as a specially protected area. BR can have but doesn't need to have the same zoning as NP or Protected Landscape Area has. The core zone must be covered by the relevant legislative and its management is fully in



hands of the administration of the relevant large-area protected area (mostly NP, Protected Landscape Area but also Natura 2000 sites or Ramsar convention localities). On the contrary in the buffer zone and particularly in the transition zone the most important is common searching for the most suitable utilization of nature sources (participative management). By the spirit of BR policy the constructive cooperation of all the partners (stakeholders) participating in BR's care and

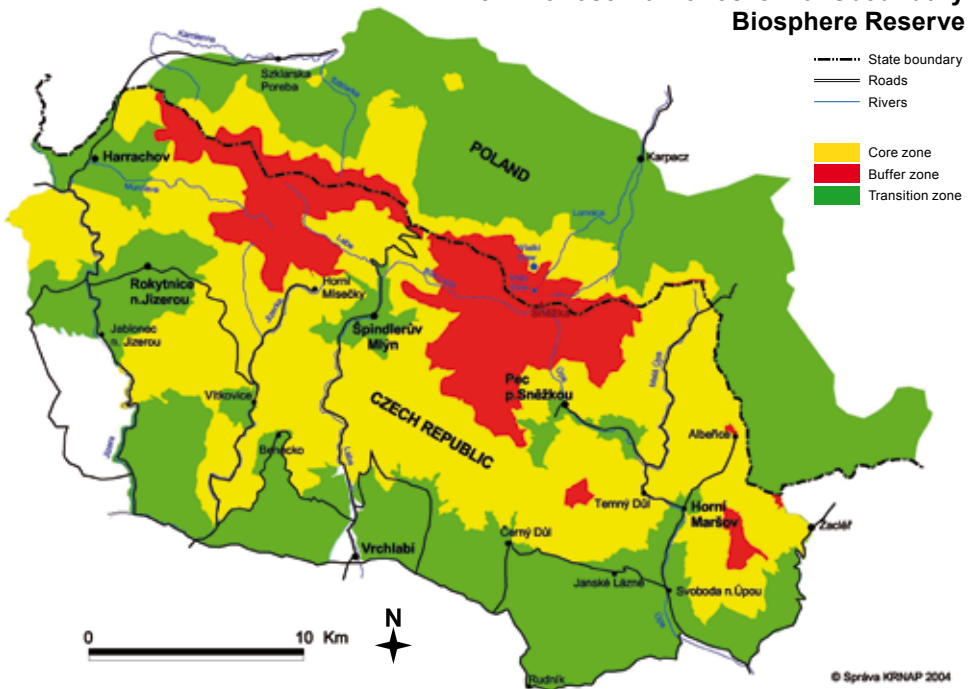
utilisation is supposed (NP administration or Protected Landscape Area, local self-government, state administration, entrepreneurs, local inhabitants, visitors...).

Area zoning

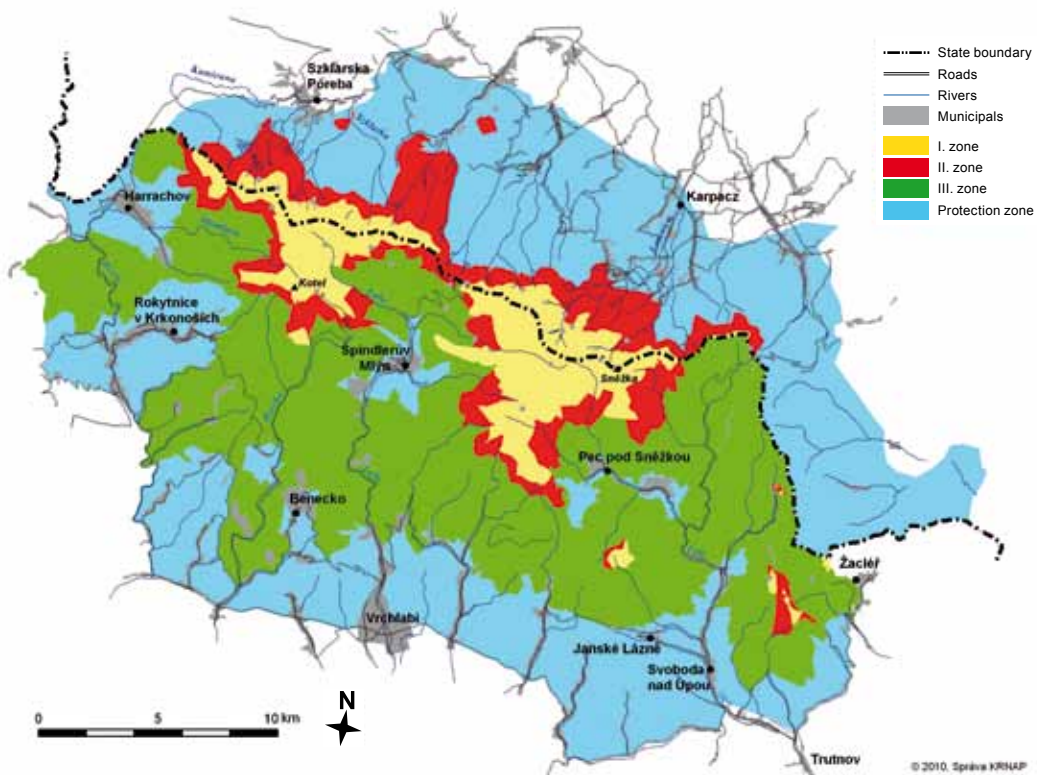
In case of KRNAP and the Krkonoše/ Karkonosze BR it is about almost full overlap of the individual zones, which are however called differently in both countries and they have rather different mode of utilization according to the national legislations. The core zone Krkonoše BR overlaps ± the I. and II. zone of the Krkonoše National Park and the legislation is hear fully within the Act No. 114/92 Code; on Nature Conservation and Landscape

Protection of the Czech Republic. The buffer zone is ± the same as the III. zone of KRNAP and the transition zone of BR is the same with the buffer zone of KRNAP and KPN. The different are relevant national terms (in Poland the I. and II. zone of NP is called strefa ochrony ścisłej KPN, III. zone of NP is called strefa ochrony częściowej KPN and buffer zone is called otulina KPN).

The Krkonoše/Karkonosze Transboundary Biosphere Reserve



Zoning of the Krkonoše/Karkonosze Transboundary Biosphere Reserve and zoning of both national parks



Salamander and White Crocus – examples of strictly protected organisms of BRKK



Pančava waterfall in the western Krkonoše



Transboundary Parks...following nature's design



Young ones of the rare Black Stork



Cranberry fruits are on the menu of a number of mountain animals

Krkonoše, MAB and EUROPARC Federation

Both KRNAP and KPN became a member of the grouping of European protected areas, known as EUROPARC Federation (hereinafter EF) in 1990. The transboundary statute and particularly lively cooperation of both national parks suitably fulfilled the aims of one of the EF projects, called Transboundary Parks – Following Nature's Design. Both of the national parks administrations therefore applied for certification. This certification is characterized in that it has a similar strict evaluation

ritual as MAB program. In 2004 both parks obtained the certificate of the exemplary transboundary cooperation between the protected areas in Europe. Ideas, principles and activities of the transboundary cooperation, which are developed by UNESCO MAB Program and EUROPARC Federation Program, complement one another very functionally and they guarantee harmonic connection of nature protection and sustainable development of the territory of both Krkonoše Mountains National Parks

Partners in care Krkonoše/Karkonosze Biosphere Reserve

Since the Krkonoše/Karkonosze BR was declared, particularly KRNP Administration and Dyrekcja KPN have been the guarantors of the implementation of Man and the Biosphere Programme principles. However fulfilment of BR aims cannot do without involvement of all the local institutions operating in the Krkonoše Mountains. The Administrations of both National Parks, representatives of the local administration, state administration, NGO's and business spheres from the Czech and Polish side of the Krkonoše Mountains signed in 1996 Agreement on the mutual cooperation. It is focused

on achievement of the Krkonoše Mountains' harmonic development and full respect of natural, cultural and historical values of these outstanding mountains. A part of the agreement was establishment of the Czech-Polish Council of the Krkonoše/Karkonosze BR and the Czech-Polish Office for BRKK, serving as a platform for all ways of transboundary cooperation.





Regular and necessary care of the values of BRKK cover not only maintenance of the tourist infrastructure, but also of the Krkonoše mountains meadows





Revitalisation of mountains forest damaged by emissions is one of the main tasks of BRKK managers

Current condition of the Krkonoše/ Karkonosze Biosphere Reserve

The Krkonoše Mountains have gone through significant changes in the 2nd part of 20th century, as the result of rash development of tourism, the excessive attendance and long-term emission burden. It has appreciably affected not only landscape character of these mountains but it also jeopardized its natural, cultural and historical wealth. Therefore

the administrators on both sides of the state border, who are not indifferent to the Krkonoše Mountains' destiny, have been trying to cooperate for several years so that within the Czech, Polish and transboundary projects they keep or restore the values of the mountains, which is exceptional in the central Europe context. The statue, aims and mission of the

BASIC STATISTICAL DATA ABOUT THE KRKONOŠE/ KARKONOSZE BIOSPHERE RESERVE

	Czech part	Polish part	Totally BRKK
Category of particularly protected area	Krkonoše National Park and its protection zone	Karkonoski Park Narodowy	
Local name of BR	Biosphere reserve Krkonoše/ Karkonosze	Rezerwat Biosfery Karkonosze/Krkonoše	
Number of towns and villages	29	18	47
Number of inhabitants	27 700		
Population density	48,7 ob./km ²		
Total area	54 969 ha	16 830 ha	71 799 ha
- core zone	7 919 ha (14,4%)	1 717 (10,2%)	9 636 ha (13,4%)
- buffer zone	28 408 ha (51,7%)	3 847 (22,9%)	32 255 ha (44,9%)
- transition zone	18 642 (33,9%)	11 266 (66,9%)	29 908 ha (41,7%)



Krkonoše/Karkonosze Transboundary Biosphere Reserve provide all the preconditions for it. The cooperation covers science and research areas, social and economic issues, rescue of regional architecture, historical and culture sites and traditional crafts, reconstruction and renovation of mountain forests and meadows and a number of other areas.



Revitalisation projects on Úpa peat bog or on the selected parts of the Krkonoše rivers and streams are examples of sensitive reconstruction of water environment of the Krkonoše Mountains



The same mountains, the same forests

Political and administrative border has separated Krkonoše artificially but it still has not prevented the forests on the southern and northern slopes of the mountains from suffering recently due to unsuitable ways of management, particularly then as a result of long-distance transfer of industrial emissions. Catastrophic scenarios of emission situation

development fortunately have not gone truth and so the fight for mountain forests renovation has been in progress since the 90's of the 20th century. Considerable funds from the project of Dutch foundation Face and from the project of the World Bank, GEF-Biodiversity, have allowed to start the process of reconstruction of the mountain forests.



Care of mountains forests on both of sides of the Krkonoše require very sensitive approach of the foresters



The close cooperation of the scientists and foresters at both sides of the Czech-Polish border represent for Krkonoše forests a real chance that it will be possible to restore them in their full beauty and diversity. The year of 2011 was announced by UN as the International year of forests and Administrations of both KRNAP and KPN want to join this worldwide event by publishing a series of Czech-Polish



publications, explaining Krkonoše forests problems to general public.



The scientists monitor not only flora and fauna condition in BRKK, but also quality of atmosphere, including mapping of snowfall, using GIS and GPS technologies

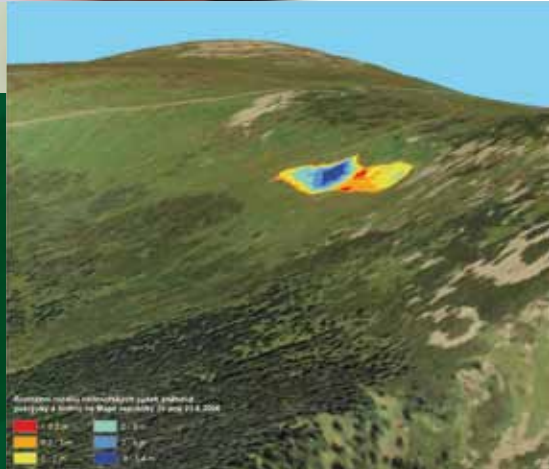
Biosphere reserve as a scientific laboratory

In the course of five hundred years the Krkonoše Mountains have literally become a scientific workshop of Czech, Silesian and later also German and Polish universities. Only during the last 50 years of the existence of both the national parks, it was written about six thousand of scientific articles and books, which unprecedentedly enlarge older scientific literature. Considering science, Krkonoše belong to the most explored mountains in Europe. However the scientific teams were separated for long decades by the

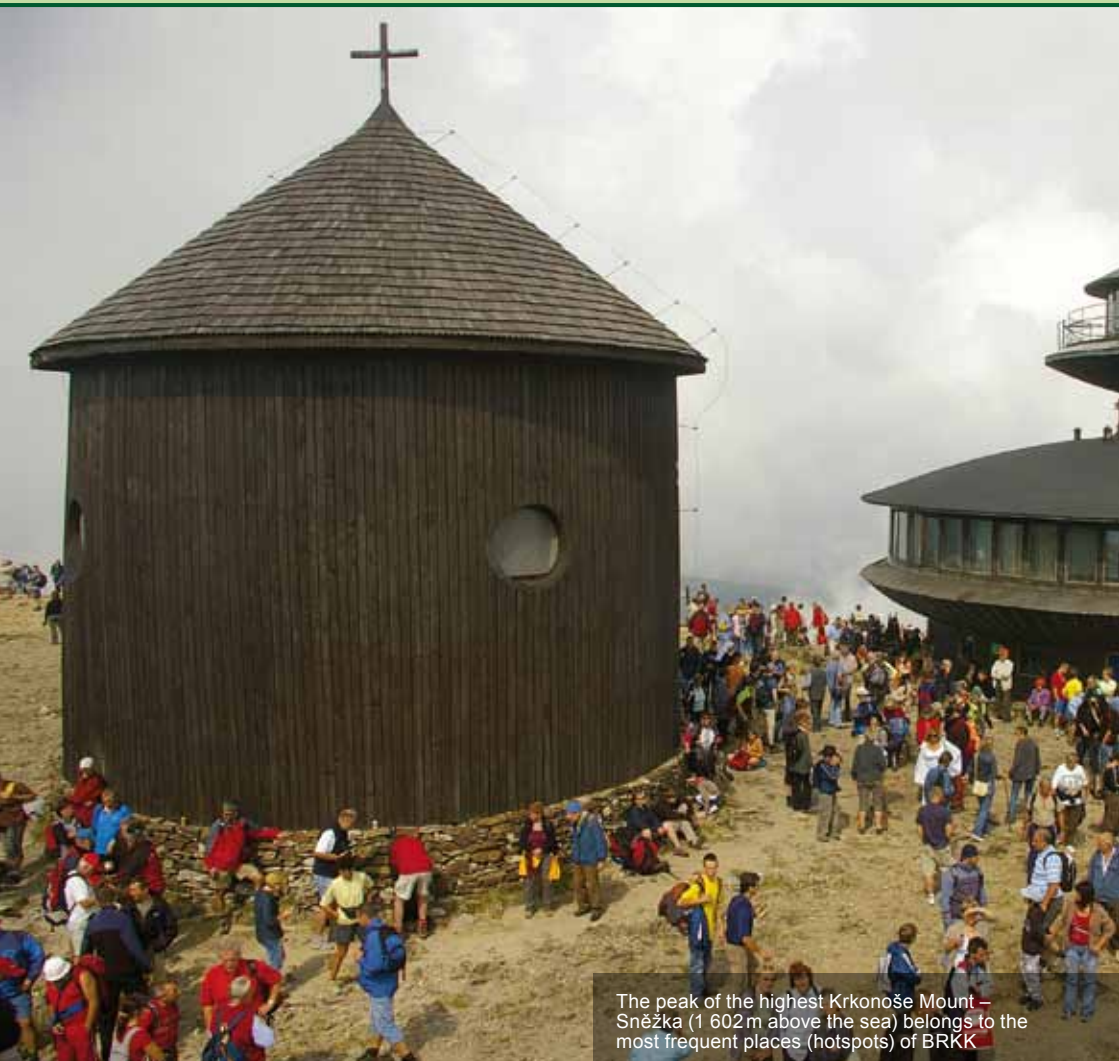
state border and mutual cooperation or common publications, emphasizing indivisibility of the mountains, were missing. Only in last three decades the situation has changed. The scientists organize every 3 years common Czech-Polish conferences under the name Geoecological problems of the Krkonoše Mountains. The results of modern research on the fields of nature, forest, agriculture and historical science are published every year in the Journal of scientific works called Opera Corcontica (already 47



volumes). The extensive Czech-Polish research of the Krkonoše arctic-alpine tundra is carried out, the scientists cooperate on monitoring, research and protection of the endangered species of plants and animals but they also investigate the impacts of long-term climate changes or tourism load on the sensitive environment of the Krkonoše/Karkonosze Biosphere Reserve. The significant help for the administrators of the territory will be establishment of the single and integrated system GIS in accordance to



the EU INSPIRE Direction, facilitating storing and using a huge amount of scientific data, concentrated particularly at the Administrations of both Krkonoše National Parks.



Tourists on the ridges and in the valleys of the Krkonoše Mountains

The Krkonoše Mountains are yearly visited by more than 5 million people on the Czech side and 1,5–2 million people on the Polish side of the mountains (the figures represent number of days

of the stay, so called person-days). The common border and sufficient amount of border crossing allow easy trips along the whole mountains and work in tourism represents a significant source of living



for the local people. However the high attendance of the biosphere reserve simultaneously initiates also a lot of problems that must be dealt with by BR administrators. They are safety of tourists, modern arrangement of the tourism infrastructure in the mountain terrain, effective way of communication with visitors but also some undesirable activities which are in contradiction with long term harmonic development of BR, such as: the excessive development of downhill skiing or some unpermitted activities of winter sports followers in core zone of BR (so called hard forms of tourism).



Projects of the modern terrain equipment and care of the tourists in BRKK remember also to handicapped visitors of the Krkonoše





Information centres and Krkonoše museums on the both sides of the mountains play a significant role in the care of Krkonoše values

The way of craft traditions – Via Fabrilis

Our ancestors bequeathed in the Krkonoše Mountains a great many documents of their harmonic coexistence with rough mountain landscape – peculiar architecture of log cabins, churches, chapels, small chapels and bell towers, Krkonoše Christmas cribs, a mythic person of Krakonoš (Rübezahl) and also a lot of different crafts, some of which have almost disappeared. There also some values created by human, which belong to the

values of biosphere reserves and so rescue of culture and historical values is no less important part of missions of Man and the Biosphere Program as rescue of nature diversity. Project “Via Fabrilis – way of craft traditions“ was prepared by Administration of KRNAP together with Museum of ceramics in Polish Boleslavec. Its aim is to support tourism development and to preserve culture heritage also in transboundary Czech-Polish territory



where the Krkonoše/Karkonosze BR belong to. Apart of common exhibitions of partners on the both sides of the border and publications promoting craft traditions it covers also the construction of the original fourth log cabin in Vrchlabí and it takes into account also the costly reconstruction of multifunctional monastery garden in the area of Krkonoše Museum. It will be a significant act to remember and to sustain traditions being a part of the Krkonoše/Karkonosze Biosphere Reserve values.



Krkonoše 2050 vision – Friendship of people and mountains

Harmonic development and reasonable utilization of natural values of the Krkonoše Mountains are realized not only in a friendly spirit and opinion accordance but they are followed by many long term ecological disputes. An example might be stormy discussion lasting for decades about the future image of the Sněžka Mt. and cable way to its top, development of skiing areas, building of apartment houses or mountain cycling tourism

and some other sport activities in the core zone of BR. KRNAP Council and Union of Krkonoše towns and villages have therefore decided to start constructive discussions about strategic orientation of the future development of the Krkonoše Mountains and they have agreed on the project called **Krkonoše 2050 Vision**. It is based on the belief that different interest groups will find common speech better when thinking about further future

of the Krkonoše Mountains than in discussion about present cases. Two year discussion of nine- membered working group, which was created by mayors of the Krkonoše municipalities and ecologists, resulted in forming of the common vision of the Krkonoše Mountains. Using a motto **“Friendship of People and Mountains”** they prepared document called **„Declaration on the Krkonoše Mountains Future”**. The document addresses all Krkonoše natives and inhabitants, Krkonoše municipalities

and companies or their associations, non-profit organizations, schools, institutions and other subjects, who have relation to people and nature of the Krkonoše Mountains, to support this common vision by their agreement and to assert its rules in everyday life of people in the Krkonoše Mountains. The project was a significant act, following all the principles of the program **Man and the Biosphere**. It indicated a way of protecting and reasonable using of all natural and culture values which the Krkonoše Mountains provide to us.

Massif of the Sněžka Mount is a symbol of unique values of the Krkonoše/Karkonosze Transboundary Biosphere Reserve. Its considerate utilization and consistent protection should be part of the basic ethical codex of all the fans of these beautiful mountains





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ABBREVIATIONS AND ACRONYMS USED:

BR – biosphere reserve

EUROPARC Federation – Face – Dutch foundation Forest Absorbing Carbon-dioxide Emission

GEF-Biodiversity – world program of environment protection, supported by the World Bank

GOPR – Górskie Ochotnicze Pogotowie Ratunkowe – Polish Mountain Rescue Service

HS Krkonoše – Mountain Rescue Service Krkonoše

CHÚ – protected area

ICC MAB – The International Coordinating Council of Man and the Biosphere Program

ITEX – International Tundra Experiment

IUCN – World Organization of Nature Conservation

KPN – Karkonoszki Park Narodowy

KRNAP – The Krkonoše mountains National Park

MAB – Man and Biosphere, UNESCO Global Program

Natura 2000 – system of protected areas of European importance in EU countries

PTTK – Polskie Towarzystwo Turystyczno-Krajoznawcze, analogy of Czech Club of Tourists

Ramsar Convention – Convention on the most important wetland in the world

RDA – Regional Development Agency

SEVER – Centre of ecologic education and ethics Rýchory

TANAP – The Tatra Mountains National Park

UNESCO – The United Nations Educational, Scientific and Culture Organization

Via Fabrilis – Czech-Polish project Way of craft traditions

WEB LINKS:

www.krnep.cz

www.kpnmab.pl

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