

Wnuk Zygmunt

### The Carpathians as the object protecting Polish and Ukrainian nature

*The idea of conservation of nature is a democratic one, as it conserves treasures of nature for the society. W. Szafer.*

*Key words: conservation of nature, biosphere reserve, national park, landscape park.*

The Carpathians are a range of mountains situated in Central Europe. They are 1300 kilometers long between Dunajec River Gorge on the Austria-Slovakia border near Bratislava and so-called Iron Gate in the Romania-Serbia borderland. The Carpathians are a part of the following countries: **Romania (55,5%), Slovakia (14,3%), Ukraine (10,3%), Poland (9,3%), Hungary (4,3%), Czech Republic (6%) and Austria (0,2%).** The mountains are the second largest (after the Alps) range of mountains in Europe, and they cover a total area of 209 000 square kilometers. The Carpathians are usually divided into three groups, that is **the Western Carpathians, the Eastern Carpathians and the Southern Carpathians.** The Carpathians mark a watershed between the Baltic Basin and the Black Sea Basin (see Kondracki 2002).



Fig. 1. The Carpathians, according to Kondracki 2002

In order to conserve the Carpathians, it was suggested at XXIV National LOP Meeting in 1995 by Z. Wnuk to conserve the mountains in question with the title The Green Carpathians (Wnuk 1995, 2000, 2003, 2006). The aims of the project are the following:

the mobilization of economy in its pro-environmental forms by comprehensive and efficient using of nature values,

forming the basis of modern conservation of both nature and landscape,

countering of negative social and economy phenomena

Due to the works of researchers, pro-environmental organizations, such as LOP and the body of conservation of nature of Poland, Ukraine and Slovakia in 1990-1999, it has been possible to promote and implement ideas of the conservation of Bieszczady Mountains nature and protect them by creating The International Biosphere Reserve of Eastern Carpathians.

The Carpathians are the object that is common to conserve the nature of Poland, Ukraine and Slovakia. It is fitting to add that it is the first UNESCO biosphere reserve in the world that is located in the area of three countries, that is Poland, Slovakia and Ukraine, and – moreover – it is one of the biggest reserves in Europe. It was established in 1992-1999 in Bieszczady, and it covers a total area of 208 089 ha (where 53,4% - that is 108 724 ha belongs to Poland, 19,1%, that is 407 78 ha belongs to Slovakia and 27,5%, that is 585 87 ha belongs to Ukraine).

The reserve includes Bieszczady National Park, Cisna-Wetlina Landscape Park and San Valley Landscape Park (Polish part); Poloniny National Park (Slovakia), Uzhansky National Park and Nadsański Regional Landscape Park (Ukraine). The reserve in question is a unique treasure of great significance that connects both unique nature and cultural values. It conserves the least transformed ecosystems of Europe; it is the biggest complex that comprises highly natural beech forests, mountain meadows known as mountain pasture (flowery steppe) with its endemic and endangered species and plant communities of a high biodiversity. In the valleys one can observe the legacy of the traditional model of land-use in the last centuries. The reserve is also one of the most important sanctuaries for big animals that are typical of primeval European habitats, conserving the populations of all native predators, e.g. brown bear, wolf, golden eagle, lynx and wild cat, as well as the following herbivores: deer, roe deer and reintroduced beavers, Hucul horses and European bison (see Olaczek 2008). The reserve conserves cultural heritage, that is rural wooden monuments and sacred architecture of Boykos and Lemkos. Unique nature and cultural values of this area show potential that is important for the sustainable development that is based on ecofriendly ecotourism. The reserve in question is one of the biggest protected areas in the Carpathians. About 72% of its

area is known as one of the biggest and the most important sanctuaries of Nature 2000 in the EU, and the only protected area of the Carpathians that is divided by the external border of the European Union (see [www.bieszczady.pl](http://www.bieszczady.pl), Olaczek 2008).

Bieszczady National Park is one of the 23 Polish national parks; it is situated in Western Bieszczady Mountains and it is located in the south-east part of Subcarpathian Voivodship. Bieszczady National Park was established in 1973 and it covers a total area of 29 202 ha. It is the third largest National Park in Poland, and the largest mountain park. Since 1992 it has been a part of the East Carpathian Biosphere Reserve. The most important advantages of the park include the natural forms of landscape of Eastern Carpathians, extensive natural ecosystems of Carpathian wilderness, numerous populations of large mammals, e.g. brown bear, wolf, European bison and lynx (logo of the park), birds of prey and well-preserved high moors. It also includes the highest summits of Bieszczady Mountains, e.g. Tarnica (its height is 1346 metres above sea level), Krzemień (its height is 1335 metres above sea level) and Halicz (its height is 1333 metres above sea level) as well as a range of Polonina Carynska (1297 metres above sea level). One can find there Opolonek summit (1028 metres above sea level) that is situated near the border with Ukraine.

The park is a nature sanctuary and it protects all the natural values of the Polish part of East Carpathians. There are three climatic and plant zones, that is highlands up to 500 m, lower regiel from 501 to 1150 m and mountain pasture (flowery steppe), up to 1346 m. One can find there 15 forest communities and about 60 non-forest communities, including between ten and twenty endemic complexes, e.g. green alder, subcarpathian jaworzyna zioloroslowa, flowery ziolorosle poloninowe, nardetalia, community with tufted hair-grass, subcarpathian groups of blueberries. About 80% of the park is inhabited by natural leafy forests and mixed forest, including beech tree, Grey Alder, maple, sycamore, spruce and fir. 15 % constitute stands situated in the south-west mountainsides of Small and Big Rawka and in the northern slopes of Smerek. The plants are under strict protection and they encompass 63% of the land, and this is the highest rate in Poland if we take into account national parks. There are 230 species of vertebrates in the park, for example lynx, wild cat, brown bear, wolf, golden eagle, lesser spotted eagle, eagle owl, Ural owl, Aesculapian snake, European bison and Carpathian deer. Currently, there are 280 European bison in Bieszczady Mountains, several dozen of which inhabit the park. This is the largest group of bison living in the wild in the mountains in the world. Moreover, one can find there about 140 species of breeding birds, e.g. golden eagle, lesser spotted eagle, snake eagle, honey buzzard. There are also a number of rare native species, such as Eurasian Pygmy Owl, the Boreal Owl, Eurasian Eagle

Owl and the Ural Owl. One can find there the White-backed Woodpecker and the Three-toed Woodpecker, both species can be found in the Polish Red List of Threatened Species. It is fitting to add that there are many alpine birds, such as the Water Pipit, the Alpine Accentor and the Common Rock Thrush.

One can find there mountain pasture (1150-1250 metres above sea level) that is unique in Poland; it covers 1 800 ha (90% of which is under strict protection). There are plants which are hardly found in other Polish mountains, for example *Aconitum bucovinense*, *Viola dacica*, *Cirsium waldsteinii* or *Melampyrum herbichii*. In the early spring along a watercourse one can see a spring snowflake that is in bloom; this Subcarpathian subspecies is characterized by two flowers on one stem (photo).

In 1944-1947 the local population was displaced from the area that currently belongs to the park; the lands that previously belonged to the villages and settlements are now covered by trees and bushes. Notice boards concerning towns existing until 1947 need to be located here. On wandering round the valleys one can notice the remnants of old settlements, baulks, cellars, collapsed wells, underpinning of houses, roadside trees and orchards that have run wild. In order to keep open land, regular mowing has been introduced since 1993. Apart from this, Hucul horses have been put out to pasture. The breeding of Hucul horses can be found in Wolostat and Tarnawa Nizna. Moreover, the Centre of Science and Didactics and the Natural History Museum of Bieszczady National Park in Ustrzyki Dolne are worth visiting too. It has one of the biggest collection of biological specimen in Poland (see [www.bdpn.pl](http://www.bdpn.pl)). Bieszczady National Park has been protected within the ecological network NATURE 2000. One can find there 780 species of vascular plants, 250 species of moss, 500 species of lichen and 1000 species of fungi. 30 of them are regarded as endemic East Carpathian species, for example *Melampyrum saxosum*, *Aconitum lasiocarpum* (Rchb.) Gayer, *Aconitum tauricum*, *Dianthus carthusianorum* (Carthusian Pink), *Dianthus petraeus* and *Silene dubia* (Carpathian catchfly). Bocznik wetlinski is the most precious fungus that occurs only in Bieszczady Mountains, it is labelled as endemic species (see [www.bdpn.pl](http://www.bdpn.pl)).

Bieszczady Mountains are attractive for those interested in hiking, horse riding, mountain biking, cross-country skiing and photography. One can also find there tourist trails and nature trails. The Centre of Science and Didactics in Ustrzyki Dolne is responsible for environmental education, it gives classes and organizes environmental workshops.

Cisna-Wetlina Landscape Park is situated in the Western Bieszczady, near Bieszczady National Park and San Valley Landscape Park. All three parks are included in the East Carpathian Biosphere Reserve. The park was established in 1992 and it covers an area of 51 146,75 ha (510,14 square kilometres). The highest

peaks rise to 1200 meters above sea level. One can find there not only two yew tree reserves but also bears, wolves, lynxes and wild cats. It protects nature values of Western Bieszczady. The landscape of the park is created by picturesque mountain ridges, 9 of which exceeds 1000 meters above sea level; the majority of them are good vantage points. The land of the park is filled with natural values with forests covering most of its area (83%). It is fitting to add that forest complexes are a good place for various animals to live. Among the oddities of the park one can enumerate rock steps, gorges and inselberg rocks.

The most valuable – in respect to environment – are those lands that are under protection, and this group includes the following reserves: Zwizlo, Cisy on Jawor Mountain, Woronikowka, Gołoborze, Sine Wiry, Olszyna Łęgowa in Kalnica and Przełom Osławy pod Duszatynem. Both nature values and historic-cultural monuments can be admired if one takes advantage of Bieszczadzka choo-choo train that is available in the tourist season from May to October. Its main station is Cisna, and the route runs along the Slovak border. This narrow gauge runs from Przyszlup to Wola Michowa. Among the attractions one cannot ignore annual Bieszczady ski-running ‘With a stick to a Bear’ (see [www.bieszczady.pl](http://www.bieszczady.pl)).

The area of Cisna-Wetlina Landscape Park is renowned for the highest afforestation rate in Poland (83%), one can find there Carpathian beech wood with the dominance of beech tree and fir tree, as well as spruce, maple and sycamore. One can also see protected fern in the undergrowth, that is *Asplenium scolopendrium* (hart’s-tongue fern) and *Polypodium vulgare* (the commonly polypody). Additionally, we cannot ignore a unique complex of *Caltha laetae-Alnetum* (Stare Siolo). In turn, a poor fen which is a natural wetland habitat; this is the only place in Bieszczady where *Alnus glutinosa* (black alder) thrives. Flora of the park includes 940 species of vascular plants (that is 170 mountain species, namely 33 alpine species and 43 subalpine species). Note that 40 species from this group are fully protected, and 11 are partially protected. The most numerous group of *Asplenium scolopendrium* (hart’s-tongue fern) grows near Sine Wiry reserve between Bukowinka and Pereszliba. One can find there very rare *Dianthus armeria* (Deptford Pink), *Diditalis* (in Rabiański valley), *Epipactis helleborine* (Broad-leaved Helleborine) near the San, *Gentianella ciliata* (Żubracze), *Scopolia carniolica*, (the henbane bell) in Wetlina valley between Zawój and the mouth of a river Solinka. There are about 80 species of animals that are rare or protected, namely 11 species of mammals and 20 species of birds (predators). The representatives of fauna find there favourable living conditions in the deserted backwoods; and these species include brown bear, lynx, wild cat and rare birds of prey, such as lesser spotted eagle, golden eagle, snake eagle; birds living in high

mountains, e.g. the Alpine Accentor and the Water Pipit; and stenothermic birds, e.g. the Collared Flycatcher and the Common Rock Thrush. Apart from the species enumerated above, the park is inhabited by a number of species of amphibians, reptiles and insects.

San Valley Landscape Park was established in 1992, covering an area of 34 865 ha (342.70 square kilometres) and it is buffer zone of Bieszczady National Park. It protects not only San valley from its source to Lake Solina (where the European crayfish lives), but also Otryt mountain range and massifs of Magura Stuposianska, Dwernik Kamień and Jeleniowaty. From the south it adjoins Bieszczady National Park, whereas from the west it adjoins Cisna-Wetlina Landscape Park. The park was established to conserve the upper reaches of the San river that is the axis of the park. Its valley is a paradise for both animals and humans. On the right, streams from Otryt flow into the San; on the left, longer streams, like Halicz, Litmirz, Roztoki, Muczny, Wolosaty, Dwernik, Hylaty, Hulski and Tworylczyk (Olaczek 2008). 83% of the park area is covered by forest which create big complexes of so-called Carpathian beech wooded sections of the Tatra mountains; almost half of this part is covered with a hundred-year-old forest stands. It is worth mentioning that beautiful meadows, bogs and the areas of plant succession in the abandoned villages inhabited by Boykos in the past add variety to the forest landscape. Flora of vascular plants is represented by 806 species with many alpine vegetation positions (38 species), regiel (64 species) and east Carpathian ones, not to mention unique biocenosis of bogs. Fauna of this picturesque park (about 130 species) is represented by forest species, e.g. wolves, European bison, all reptiles, not to mention Polish water wildlife that is the richest in the upper stretch of the San. This place is a nesting side of the following animals, golden eagle, lesser spotted eagle, black stork, raven and other rare species of birds registered in the Polish Red Data List. The most important, almost virgin territories are protected in 8 nature reserves, including five peat-bog, that is Zakole (5,25 ha), Tamawa (34,40 ha), Litmirz (13 ha), Łokieć (10,28 ha) and Dżwiniacz (10,51 ha); floristic Śnieżycza wiosenna in Dwerniczek (4,94 ha); forest the Myczkowskiego Hulskie and landscape Krywe (511,73 ha). On account of quite small population density, this place abounds in forest fauna and flora. Spending time in Bieszczady Mountains, it is worth visiting the oldest and the most beautiful the Boykos Orthodox church with its pyramidal roof in Smolnik; the remains of the Orthodox church in Hulskie and Krywe and remains of the graveyards with historic gravestones are worth visiting too (see [pl.wikipedia.org/wiki/Park\\_Krajobrazowy\\_Doliny\\_Sanu](http://pl.wikipedia.org/wiki/Park_Krajobrazowy_Doliny_Sanu)). We can distinguish two altitudinal zonation here, namely foothills (up to 500 metres above sea level) and the lower regiel (501-1150 metres above sea level), however, the latter accounts for the

majority of the described terrain. Among the east Carpathian species, one can enumerate the following ones: *Scorzonera rosea*, *Alnus viridis* (Green Alder), *Centaurea kotschyana*, *Dianthus compactus*, *Euphorbia carpatica*, *Veratrum album* (commonly known as false helleborine), *Viola dacica*, *Aconitum* (the queen of poisons), *Telekia speciosa* and *Leucojum vernum* in its Carpathian variety. In turn, among the local east Carpathian endemic species one can hardly ignore *Euphorbia carpatica*, *Aconitum*, *Leucojum vernum* or saprophytic fungus – bocznik wetlinski which inhabits beech. The landscape with a touch of forest add variety to open areas. Both San Valley Landscape Park and Nadsanski Regional Landscape Park protect the valley; its source can be found in Ukraine at an altitude of about 925 metres above sea level, on the south-eastern Piniaszkowy slopes, near Sianki.

Nadsański Regional Landscape Park is situated in the west of Ukraine. Borynia is the seat of local government. Together with Bieszczady National Park and San Valley Landscape Park they create the East Carpathian Biosphere Reserve. The park was established 1997, covering an area of 19 428 ha in order to unify the conservation of nature in the San valley. The main aim is to promote such forms of economy that allow to maintain biological biodiversity of the region. Furthermore, it is vital to encourage the tourists to make use of the park.

The park protects the eastern part, Ukrainian part of the upper San valley, three mountain ranges running from north west to south east: Czerwony Wierch (extension of Polish Otryt mountain range with culmination – Marhityna 826 metres above sea level), Sański Grzbiet (Szczolb – 874 metres above sea level), Buczok mountain range that is situated on the south (up to 951 metres above sea level), the valley with Rika streams (tributary of the San) and Jabłuńka (tributary of the Stryj). The borders of the park reach the watersheds between the San and the Dniester, whereas near Dnistryk Dubowyj village they come together in the valley of north Dniester (see [pl.wikipedia.org/wiki/Nadsański\\_Regionalny\\_Park\\_Krajobrazowy](http://pl.wikipedia.org/wiki/Nadsański_Regionalny_Park_Krajobrazowy)). Both Polish and Ukrainian part of the San valley were depopulated after the World War II within the process of border zone purification. However, the Riki and Jabłuńki valley is not only inhabited but also developed; a few big villages are situated here, that is [Boberka](#), [Szandrowec](#), [Wyzna](#) or [Nizna Jabłuńka](#). Forests and thickets cover 51,6% of the park area; beech forests, fir forests and spruce forests are dominant here. Note that spruce comes from artificial plant of trees. Flora of the park has been considerably transformed by a man. The larger part of the forests has been replaced by pasture; currently one can observe here the process of succession with the dominance of juniper.

**Uzhansky National Park** is located in the west of Ukraine in the Grand Berenzo region of Zakarpattia Oblast. Its administrative center is the city of Welykyj

Bereznyj. The park was established in 1999 and it occupies the area of 39 159 ha; it is located on the Ukrainian, Polish and Slovak borders. Currently it is a part of International East Carpathians Biosphere Reserve, and it is divided into four zones, namely protected, limited recreation, stationary recreation and economic. The park is under the academic auspices of **Uzhrodzki National University**. The park protects the valley of the upper Uzh River with its sources; it also protects the east end Western Bieszczady, south-west end of Eastern Bieszczady and north-west part of Polonina Równa. The highest peaks of the park are situated on the Polish border ([Wielka Rawka](#) 1304 metres above sea level and [Kińczyk Bukowski](#) 1251 metres above sea level). On the Polish side it neighbours with Bieszczady National Park, whereas on the Slovak side with Poloniny National Park; it also neighbours with Nadsanski Regional Landscape Park. The park lies between Poland and Slovakia, it covers a part of Eastern Carpathians; the park is situated on the Baltic Sea and the Black Sea watershed. It is covered with forests (70%) (see [www.karpaty.travel.pl](http://www.karpaty.travel.pl)). The climate of the area is shaped by air from the Pannonian Basin. Flora of the park comprise deciduous forests (up to 1100 metres above sea level), from which 3 000 ha make primeval forest. Interestingly enough, there is a regional road running through the park and the Uzh valley. To get information on the routes and curiosities from the world of nature, it is recommended to visit the website [www.unpp.com.ua](http://www.unpp.com.ua).

Due to its location that used to eliminate any tourist movements, currently Uzhansky National Park offers quiet, uncrowded and abandoned places to take a rest. In spite of the fact that this region is developing, there are no problems with transport or accommodation. One can take advantage of affordable accommodation in the local villages, e.g. Kostryno, Ruskij Moczar or Stawne (see [www.stavnoe.com](http://www.stavnoe.com)) or spend a night in a cottage with a beautiful view of Bieszczady Mountains in Jawornik. For more information, see the website ([www.podkarpatyskarus.net/ubytovani\\_stravovani](http://www.podkarpatyskarus.net/ubytovani_stravovani)). And last but not least, fauna of the park is represented by numerous species of mammals, including wolf and bear. Not infrequently, the park is visited by European bison from Bieszczady National Park (see Stojko 2007).

**Poloniny National Park** is situated in north eastern Slovakia at the Polish and Ukrainian borders. It was created in 1997 with a protected area of 29 805 ha. It protects mountain pasture in the Bukovske vrchy mountain range, which belongs to the Eastern Carpathians. The park is adjacent to the Bieszczady National Park and the Użański National Park. The park in question covers the area of Bukovske vrchy and the highest point – Kremenec – lies at 1208 metres above sea level on a point where the borders of Poland, Slovakia and Ukraine meet. Mountain pastures can be described as meadows on mountain ridges (e.g. near Pľaše, Ďurkoveca, Riaba Skala



and Kamienna Łąka). Poloniny National Park is the least populated area of the country. Furthermore, hiking trails starts from several villages, most notably Nová Sedlica. There is a number of wooden churches of the eastern rite in Topoľa, Uličské Krivé, Ruský Potok, Jalová. Forests cover about 80% of the area; rounded ridges and boggy valleys are typical features of this place. The area is unique because of the complexes of beech and beech-fir forests that are the biggest in Europe. Many species found in the park are endemic and rare. One can find there forest predators, e.g. polar bear, wolf, lynx and wild cat ([pl.wikipedia.org/wiki/Park\\_Narodowy\\_Poloniny](http://pl.wikipedia.org/wiki/Park_Narodowy_Poloniny)).



Fig. 2. Międzynarodowy Rezerwat Biosfery «Karpaty wschodnie»

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### **Карпати як об'єкт захисту польської та української природи**

Ідея збереження природи є демократичною, оскільки вона зберігає скарби природи для суспільства. Б. Шафер.

Ключові слова: охорона природи, біосферний заповідник, національний парк, ландшафтний парк.

*Внук Зигмунт*

### **Карпаты как объект защиты польской и украинской природы**

*Идея сохранения природы является демократической, поскольку она хранит сокровища природы для общества. Б. Шафер.*

*Ключевые слова: охрана природы, биосферный заповедник, национальный парк, ландшафтный парк*