

International Biosphere Reserve „Eastern Carpathians”

Informer



Połonina Wetlińska (C.Ć.)



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Bieszczady National Park (B.Ć.)

The idea of biosphere reserves was created on the basis of the UNESCO research program „The Man and the Biosphere” (MaB). The purpose of this broad program, launched in 1971, was to solve four major human problems at the turn of the century: population growth, limited resources, destruction of the natural environment, quality and dignity of life. Plan includes both, the broad content of natural and ecological as well as social issues. It sets before scientists the task of creating „a better balance and a new harmony between man and nature”. One of the basic goals of the program is to preserve undisturbed or unmanaged areas and to protect existing richness of plants and animals. In order to achieve these goals, a network of International Biosphere Reserves was established. In 1983, at the 1st World Biosphere Congress, the tasks of these reserves were greatly expanded. Reserves contribute to the creation of a harmonious basis for the use of resources of our planet. They also serve as centres of education for basic knowledge of ecology and practical achievements in the sphere of nature conservation and sustainable economy. Social, cultural and economic functions are important in this program. A 669 such entities was created until 2017 in 120 countries representing all continents (except Antarctica). In Poland there are currently 10 biosphere reserves and 5 are in the process of formation.

The organization of the Biosphere Reserve is not covered by a rigid framework, it was many times emphasized that there are possibilities of choosing different ways depending on the legislation, tradition and development of the individual countries. The general idea is based on the functional zoning of the area. The internal part – of natural character - remains without human intervention, in the second (buffer) zone, human activity is limited only to the protection of area, in the third (transitional) zone development of a model of economy ensuring „sustainability” of ecosystems take place (so-called sustainable development). In Europe, the main problem at the point of contact between the man and the biosphere, is often strong human pressure on attractive touristic areas of biosphere reserves. The importance of the functioning of the biosphere reserves in African countries is different. Research often leads not only to the protection of biodiversity, but also to the raising the standard of living for local inhabitants, for example through the creation of artesian wells. It can be said that in the poorer regions of the world, the activities of the UNESCO MaB program often support tasks belonging to the state administration. Biosphere reserves operating in Poland fulfil most of the tasks set by the MaB in research and conservation of biological diversity. These areas also have a teaching function through museums and nature trails as well as various educational programs.

Outline of creation, goals and main values

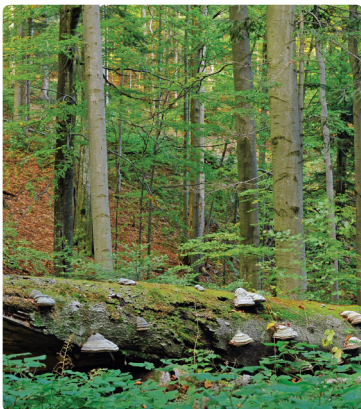


View from Rabia Skata to the southeast (C.Č.)

The “Eastern Carpathians” Biosphere Reserve covers the north-western part of the Eastern Carpathians, located in three countries: Slovakia, Poland and Ukraine. Geographically, it is located in the Western Bieszczady Mountains, whose southern part is called Bukovské vrchy. Thanks to the country frontier, anthropogenic pressures were lower here than in other parts of the Carpathians, which supported the preservation of fragments of ecosystems of primeval character. In the Polish as well as in the Slovakian part, historical events, resulted in a secondary naturalisation of the area.

Naturalists on the three sides of the border have long recognized the need for protection of the unique natural values of this area. Initially, however, these actions were limited to the territory of individual states. The first reserve of Stuzica – Jasan was established by the Hungarian Forest Board as early as 1908 (or 1912) on the Kremenáros mountain slopes (now the Ukrainian part of the IBR). In the interwar period, thanks to the efforts of prof. Alois Zlatník, the Czechoslovak authorities, increased the reserve to 560 hectares, giving it the name „Stuzice Nova” („Stuzice Rafka”).

On the Polish side, the first protected area was the nature reserve established in 1935 to protect the site of the yew in Bystre (now the „Cisy na Górze Jawor” nature reserve).



Old trees in the Stuzica Nature Reserve (C.Č.)

The idea of creating an international reserve that would protect the most valuable resources of this part of the Carpathians, for the first time appeared several decades ago. In 1925, the Czechoslovak authorities proposed the creation of a Polish-Czechoslovak nature reserve in the area of Rawka. This proposal was implemented seventy years later, although efforts were begun in the late sixties. Established in 1992 Polish-Slovak, and since 1998 tripartite

Polish-Slovak-Ukrainian International Biosphere Reserve „Eastern Carpathians”, now includes:

- on the Polish side: the Bieszczady National Park with its neighbouring landscape parks: Ciśniańsko-Wetliński and San Valley (108 934 ha in total);
- on the Slovak side: Poloniny National Park with a buffer zone (40 778 ha in total);
- on the Ukrainian side: Uzhanjski National Park and Nadsyansky Regional Landscape Park (58 587 ha in total).

In the years 1992-1996, a common zoning strategy was developed in accordance with the principles of the MaB UNESCO program:

- a. The core zone** – occupy about 14% of the area of IBR EC. It includes the strict protection areas in three national parks and several reserves. The most important function of this zone is the protection of natural resources and natural processes.
- b. The buffer zone** serves for the implementation of various forms of active protection, such as the protection of semi-natural ecosystems, reconstruction of tree stands to their natural form etc. This area occupy about 16% of IBR EC.
- c. The transition zone** occupies about 70% of IBR EC area. This is an area of great natural value, where extensive management, based on the principles of sustainable development, is allowed. Human activities in the transition zone should not degrade nature in any case, and especially should not negatively affect the core and buffer zones.



View from Bukowe Berdo to Połonina Caryńska (C.Č.)



San Valley Landscape Park (C.Č.)

Characteristics of individual protected nature conservation areas included in the IBR „Eastern Carpathians”



Picturesque area of the former Tarnawa Niżna village (C.Ć.)

On the Polish side, the most valuable natural areas are protected by the **Bieszczady National Park**, which forms a central and buffer zone of IBR EC.

The efforts to create the BNP started in the 1950s when the Bieszczady became an object of interest to naturalists and scientists. The Park was established by the Ordinance of the Council of Ministers of 4 August 1973, for the protection of the only one in the post-war Poland, area of Eastern Carpathians nature. Initially Park included compact area of the higher parts of the Tarnica and Halicz Massif and the peaks of the Połonina Caryńska (5582.02 ha). Not included in the Bieszczady National Park were characteristic „the land of the valleys,” nor any of the rare gorge valleys. The most valuable refuges of wildlife were also not included.

In 1989, BNP surface area increased to 15 710.2 ha, and in 1991 it reached an area of 27 064 ha, of which around 70% were under strict protection. In 1996, the surface area was slightly increased as a result of the inclusion of former villages Beniowa, Bukowiec and Caryńskie. In 1999, non-forest areas of former villages were included (Dźwiniacz Górny, Tarnawa Niżna, Tarnawa Wyżna, Sokoliki). The surface area of the Park is currently 29 201.06 ha. Forest ecosystems cover in total 25 019.68 ha, połoniny (alpine meadows) 1 821.41 ha, other non-forest ecosystems - 2 115.18 ha, land under water (rivers and streams) - 78.01 ha, built-up land, roads and others - 166.77 ha. Park is located in the Podkarpackie Voivodeship, in the area of two districts - Lesko and Bieszczady and three communes: Lutowska, Cisna and Czarna. Park area is one of the least populated in Poland, with about 200 inhabitants.

The exceptional values of the Park include:

- the landscape, with its characteristic altitude bands of climate and vegetation,
- forests with fauna of large herbivorous and predatory mammals and numerous populations of birds of prey and owls,
- połoniny (alpine meadows) above upper tree line, with subalpine and eastern carpathians plant associations,
- picturesque valleys left after former villages, called „the land of the valleys”, with raised peat-bogs, semi-natural meadows, pastures, tall herb communities and reed,
- rich fauna of invertebrates with numerous endemic species occurring in Eastern and Southern Carpathians and Balkans.

Ciśniańsko-Wetliński Landscape

Park with an area of 51 013.75 ha was established in 1992. The park is located in five communes: Cisna, Baligród, Komańcza, Zagórz and Solina, in the districts of Sanok and Lesko within the Podkarpackie voivodeship. The population density is also low up to 6 people per km². The park protects the characteristic landscape of parallel mountain ridges, gorges sections of Wetlina and Solinka streams with rapids, as well as other interesting forms of surface formations (chirats, landslide lakes). The remnants of old villages and traces of historical events (war cemeteries) and economy (forest railway) are an important element of protection.



Carpathian forest (C.Ć.)

The area of the park is highly forested

(about 83%). The predominant forest community is the Carpathian beech forest *Dentario glandulosae-Fagetum*. Vegetation and animal world is extremely rich, with numerous mountain and eastern Carpathians species. Park area is included in Natura 2000 site PLC 180001 Bieszczady. The following nature reserves are located here: floristic („Olszyna łągowa w Kalnicy”, „Cisy na górze Jawor”, „Woronikówka”); landscape („Przełom Ostawy pod Duszatynem”, „Sine Wiry”); geological („Gotoborze”, „Zwiezto”).

San Valley Landscape Park with the area of 28 718.0 ha, was established in 1992. It is also part of the Special Protection Area for Birds and Special Areas of Habitat Protection PLC 180001 Bieszczady. The park is located in three communes: Lutowiska, Czarna and Solina, in the districts of Sanok and Lesko within the Podkarpackie voivodeship. The population density is low up to 5 people per km². A large area (82%) is occupied by natural forest associations (mainly Carpathian beech forest *Dentario glandulosae-Fagetum*) and woodlands on former agricultural land. In the valley of San river, there are diverse, semi-natural grasslands and high raised peat bogs, with flora and fauna species typical for open areas. Especially rich is the fauna of the birds of prey (with Golden eagle *Aquila chrysaetos*, Lesser spotted eagle *Clanga pomarina*,



San Valley Landscape Park (C.Ć.)



The golden eagle (C.Ć.)

Short toed eagle *Circaetus gallicus* and others). Landscape Park protects today traces of the old Boyko villages, including Orthodox church in Smolník a UNESCO World Heritage Site. There are peat bog nature reserve „Zakole“, a landscape reserve „Krywe“, a forest reserve “Hulskie” and the floristic nature reserve „Śnieżyca wiosenna w Dwerniczku” located in the Park.

The Slovak part of the biosphere reserve forms the **Poloniny National Park** with an area of 29 805 ha, with a buffer zone of 10 973 ha. The park was established in 1997 on the basis of Landscape Park „Eastern Carpathians” existing since 1977. It is located in the southern part of the Western Bieszczady Mountains, called Bukovské vrchy, in the district of Prešov (Prešovský kraj) and region of Snina (okres Snina). According to the Slovak legislation, the area of the Park is covered by the following protection zoning: 27 342 hectares (91.8%) - III degree of protection (corresponding to more or less protected landscape in Polish legislation), 59.5 ha (0.2%) - IV degree of protection (corresponding to active protection in Polish legislation) 373.3 ha (8.0%) - V degree of protection (corresponding to strict protection in Polish legislation). V and IV degree of protection cover 20 nature reserves and 1 monument of nature, while the rest of the park has the rank of III degree of protection. The buffer zone of the Park is protected in the second degree. Legislations concerning prohibitions in particular degree of protection are described in details and entire territory of the Slovak Republic

is covered by the first degree of protection. The park area is one of the least populated regions of Slovakia (among others, due to moving of people connected with the construction of the Starina reservoir). There are currently about 2000 people living in the 10 surrounding villages. There are four Natura 2000 areas: Bukovské vrchy, Stinská, Ublianka, Ulička. Forests of the park, mainly beech and fir-beech, occupy more than 80% of the total area. The park preserves the largest area of primeval character forest in Slovakia, which in 2007 was included in the UNESCO World Heritage List. On the highest elevations there are also numerous clearings, with



Poloniny National Park – Dziurkowiec (M.B.)

vegetation of similar character to Bieszczady mountains alpine meadows (połoniny - Dziurkowiec, Raba Skala, Płasza, Kamienna). The flora of the vascular plant includes about 1000 species, including numerous Eastern Carpathians species (among others, Carpathian catchfly *Silene dubia* and Carpathian crowfoot *Ranunculus carpaticus*, absent on the Polish side).

Uzhanskyi National Park,

currently occupies area of 39 159.3 hectares and was established in 1999 on the basis of landscape park created year earlier. It is located in the Zakarpattia province (Zakarpacka obłast), within the Wielkobereznno district (rejon Wetykyj Bereznij). According to Ukrainian law, the park's management area is divided

into four zones: zone of „limited recreation” includes 5 146.4 ha (13.1%), zone of „permanent recreation” covers 89.1 ha (0.2%) and economic zone covers 6 138.6 ha (15.7%). The area of 24 254.7 hectares (62% belonging to various owners), of the park is included in the economic area (which corresponds to the protection of the landscape in Polish legislation). There are 7 nature reserves (3 forest and 4 botanical) and 10 natural monuments (old oak, Kniahynia cave and 8 mineral springs). Nearly 70% of the area is covered with beech and sycamore-beech forests. Particularly valuable are the forests on the mountain Jawornik in the pre-war nature reserve Stuzyca (in 2007 included in the UNESCO World Heritage Site), which largely preserved its original character. Beech and sycamore-beech forests reach 1200 m a.s.l. and in the crooked form they build the upper tree line. Above this altitude are located subalpine associations. Nearly 800 species of vascular plants have been identified here. Endemic species of Eastern and Southern Carpathians, such as Carpathian catchfly *Silene dubia*, Carpathian crowfoot *Ranunculus carpaticus*, Hungarian lilac *Syringa josikaea*, Red rampion *Phyteuma vagneri* and others deserve special attention.



*Old trees in the Stuzyca Nature Reserve
– Poloniny N.P.*



Uzhanskyi NP - panorama from meadows on Stinska (M.B.)



Carpathian crowfoot and rock pink (M.B.)

Nadsyansky Regional Landscape Park was created in 1997 in the border area, covering 19 428 ha on the territory of six village administrative units in the Turka region (rejon Turka) within Lviv region (Lwów oblasz). The park extends into two parallel mountain ranges reaching both sides of the European watershed. Its grounds are the source of two large European rivers. Waters of the San river with spring located near the village of Sianki, flow to the Vistula river and further to the Baltic Sea, while the Dniester, which originates in the area of the Szandrowiec village flows to the Black Sea. The park's name reflects its location along the San river on its state border section between Ukraine and Poland (and now also the border of the European Union). The two parts of the Park vary considerably – the San River Valley is almost uninhabited, while the Jabtuńka and Riki valleys are quite densely populated with rich cultural heritage and traditional land use. The population of Nadsyansky Regional Landscape Park reaches 9,000 people living in 8 villages, where many objects of cultural and historical heritage can be found. Forests and shrubland areas account for about 51.6% of the Park area and agricultural land as much as 42.9%. More than 30 species of plants occurring in the area of the Park have been included in the Ukrainian Red Book. In addition, numerous habitats and species are listed in the Annexes to the Habitats and Birds Directives and protected in the European Union.



The village of Tureczki Wyżne in Nadsyansky RLP (G.H.)

Geographical characteristics of International Biosphere Reserve “Eastern Carpathians”



„Gate” arrangement of mountain ranges (B.Ć.)

According to the division of Jerzy Kondracki, the area of the „Eastern Carpathians” Biosphere Reserve is located in the Western Bieszczady Mountains (subprovince of the Outer Eastern Carpathian Mountains, macroregion of the Eastern Beskidy, mesoregion of the Forested Beskidy Mountains). Only the south-eastern part of the Uzhanskyi National Park, in the left bank of the Už river, according to Kondracki belongs to Połonia Równa (mesoregion Beskidy Połonińskie). The area of this Park also includes a fragment of the Eastern Bieszczady Mountains (Kińczyk Hnylski on the Werchowynski Watershed Ridge). It should also be noted that according to Slovakian regionalization, the southern part of the Poloniny National Park of belongs to the Middle Beskidy Mountains (Nízke Beskidy).

The area of the Reserve extends from the Użocka Pass (853 m a.s.l.) in the east, up to the Łupkowska Pass (640 m a.s.l.) in the west, and is characterized by parallel, NW-SE arrangement of mountain ridges. The highest ridges are: Wysoki Dział (Wołoszań 1071 m a.s.l.), Otryt (Trohaniec 939 m a.s.l.), Łopiennik and Durna ridge (Łopiennik 1069 m a.s.l.), Połonia ridge (Tarnica 1346 m a.s.l.) and border ridge (Wielka Rawka 1304 m a.s.l.) - the central axis of the IBR Eastern Carpathians. On the Slovak side of the Carpathian watershed called the Bukowskie Wierchy, the “gate” arrangement of mountain ridges is less visible, and the highest ones are: Hajdošík (921 m a.s.l.), Stolová (934 m a.s.l.), Príkry (952 m a.s.l.) Veľký Bukovec (1012 m a.s.l.) and Stinská (1 093 m a.s.l.) on the border with Ukraine. In Uzhanskyi National Park, the highest peaks include: Domaszyński Wierch (987 m a.s.l.) and in the part belonging to Połonińskie Beskidy: Jawornik (1017 m a.s.l.), Studnica (1033 m a.s.l.) and Kińczyk Hnylski (1115 m a.s.l.)



View from Tarnica mount (C.Ć.)



The Nasiczniański stream in autumn (C.Ć.)

Bieszczady was formed as a result of the Alpine orogenesis at the turn of the Oligocene and Miocene - about 25 million years ago, and their sculpture was rejuvenated in the Neocene by cutting the crests of the transverse valleys, forming the grid of the river network. The area of the biosphere reserve belongs to two large structural units of the Carpathian Flysch - the Silesian Nappe in the north and the Dukla Nappe in the south. The border between them is so called pre-Dukla zone, a belt of reliefs created in the softer flysch stretching from the Beskid Pass through Ustrzyki Górne, Wetlina,

Cisna, Jabłonki and Bystre. The geological layers are mainly composed of sandstone and shale, less common mudstone, claystone, conglomerate, chert and marl. In the northern part the ridges are build from Oligocene Krosno sandstone, hence Slovak geologists call it the Krosno Nappe. Ridges of the Dukiel unit are formed by Upper Cretaceous sandstones. Long and parallel mountain ridges were formed on the outcrops of the weather-resistant sandstones, while lower parts are usually made of less-resistant rocks, usually dominated by shale. A typical feature of the Bieszczady is the presence of rock outcrops created by weather-resistant sandstone. On the steep slopes below the rock outcrops there are rock debris called grechots.

The soil cover is closely related to the relief and lithological features of the geological substrate. The following types of soils can be distinguished:

- on lithic ridges and steep slopes there are lithogenic soils (lithosoles – rock regosols, rubble regosols and poorly formed rankers);
- autogeneous soils dominate over the mountains, mainly represented by brown soils (usually brown-acidic, brown proper and leached soil);



Stone run on the slope of potonina (alpine meadow) (B.Ć.)



Starina Water Reservoir (C.Č.)

- in river valleys there are alluvial soils (fluvial muds and deluvial soils) and semihydrogenic and hydrogenic soils - gley and peaty soils.

The "spine" of the "Eastern Carpathians" Biosphere Reserve is the European watershed, which separates the Baltic Sea basin (San river catchment with the tributaries of Ostawa, Hoczewka, Solinka, Wetlina and Wołosaty) and Black Sea basin (tributaries of Laborca and Už river forming the Danube basin). Only the eastern part of the Nadsyansky Regional Landscape Park is drained by the Dniester river, which also belongs to the Black Sea basin. Grounds of this Park are the source of two large European rivers: the San with spring located near the village of Sianki and Dniester, which originates in the area of the Wotcze village (near Szandrowiec village). The river network has a grid pattern, often with gorges between mountain ridges. Some of the most interesting are: the gorge of the upper Solinka between the Dział ridge and the Jawornik ridge and the gorge of the Prowcza between the ridges of Połonina Caryńska and Wetlińska. There are two large dam reservoirs in the Reserve. Solina Reservoir, built in the 1960s, with the largest capacity in Poland of 472 million m³, is adjacent to the northern borders of the IBR EC. Starina Reservoir with a capacity of 59.8 million m³ is the largest Slovak drinking water reservoir. Due to its construction in 1980-87 about 3500 people were moved from 7 villages (Starina, Ruské, Veľká Poľana, Smolník, Ostružnica, Zvala, Dara).

The climate of the region is varied by the crossing of different air masses and the arrangement of major orographic units. There are three climatic levels:

- moderate warm with average annual temperature from + 8°C to + 6°C (up to 650 m a.s.l.);
- moderate cold with average annual temperature from + 6°C to + 4°C (650 - 1050 meters a.s.l.);
- cold (over 1050 meters a.s.l.), average annual temperature of + 4°C to + 2°C.

It should be noted that the climatic conditions vary depending on the height above sea level, the shape of the ground surface and the exposure of the slopes. The warmest climate is in the southern part of the Reserve where the absolute altitudes are slightly over 200 m a.s.l. In such places average annual temperature reaches + 8,2°C.

Characteristics of the nature and nature protection in IBR „EC”



Vegetation floors in Bieszczady (C.Ć.)

The area of the International Biosphere Reserve „Eastern Carpathians” is characterized by a specific layout of vegetation floors similar to the neighbouring region of the Beskidy Połonińskie.

There are three floors of vegetation (according to the division adopted in Poland):

- foothills or submountain zone - reaching up to about 500 m a.s.l.
- lower montane zone - reaching up to about 1150 m a.s.l.
- the zone of the alpine meadow (połoniny), with subalpine and alpine plant associations, extending from the upper tree line to the highest peaks.

Popular in the Slovak part of the IBR EC division distinguish so-called vegetation stages:

- III degree - oak-beech stage (210 - 380 m a.s.l.)
- IV degree - beech stage (340 - 690 m a.s.l.)
- V degree - fir-beech stage (500 - 940 m a.s.l.)
- VI degree - sycamore-beech stage (950-1207 m a.s.l.)

The asymmetry of the vegetation floors occurs on the northern and southern macro-slope of Bieszczady Mountains, as on the northern side they gradually move into the relatively high Sanocko-Turczańskie Mountains, reaching a minimum height of about 500 m a.s.l. near the Solina Reservoir. In Zakarpattia the slopes on the relatively short section fall to 250 m a.s.l. in the valleys of Už and Cirocha rivers. Therefore, the linden-hornbeam wood *Tilio-Carpinetum* are best developed in these areas and are protected in the reserves of Hruńok, Strużnická Dolina, Uliczanka and Dubova.

In the forests of the lower montane zone, the Carpathian beechwood covers largest surface with forest floor rich in sweet woodruff, glandular bittercress and comfrey *Dentario glandulosae-Fagetum*. We can also meet acidophilous beechwoods with woodrush and bilberry *Luzulo nemorosae-fagetum*. The shady and steep slopes are overgrown with sycamore forests where perennial honesty and Hart's tongue are common *Phyllitido-Aceretum* and *Lunario-Aceretum*. Along the streams, Carpathian alder wood *Alnetum incanae carpaticum* with large butterburs, spring snowflake and ostrich fernstr occur. In places with no outflow one can find alder marsh wood with mountain marigold *Caltho-Alnetum*. At the upper tree line, the proportion of sycamore is increased, while the size of the trees decreases, and sometimes

density of the woods decreases as the result of severer climate. Typical plant associations of this zone are Carpathian sycamore wood *Aceri-Fagetum* and herb Carpathian beech wood subassociation *Dentario glandulosae-Fagetum athyrietosum distentifoliae*. A rowan shrubs *Athyrio distentifoliae-Sorbetum* and green alder associations *Pulmonario filarszkyanae-Alnetum viridis* occur above the upper tree line in the alpine meadow zone (potoniny). In the spring areas, tall herb communities with eastern Carpathian species are present such as alpine globeflower, Kotschy's knapweed and white false helleborine *Trollio altissimae-Knautietum dipsacifoliae*. The vast majority of alpine meadow slopes are covered with grassland with smallreed *Tanaceto-Calamagrostietum arundinaceae*, tufted hairgrass *Poo chaixi-Deschampsietum caespitosum* and alpine bilberry and crowberry communities *Vaccinietum myrtilli*. On the highest hills and ridges we meet alpine swards, with lower fescue, golden cinquefoil and giant catsear *Potentillo aureae-Festucetum airoides*. On rock crevices, rock ledges communities developed with bluebell, paniculate saxifrage and mountain houseleek as well as bilberry communities with crowberry *Empetro hermaphroditum Vaccinietum myrtilli*.

Very diverse non-forest communities of "Land of valleys", characterized by rich, mosaic of meadow, pasture, herbaceous and reed vegetation can be observed. In the Polish part of the area, the former, no longer existing villages were overgrown by secondary succession communities. Despite the subsidies to maintain meadow communities, this process is progressing. In the Slovak part, large-scale farms maintain a significant area of meadows, although currently there is a decrease in the number of inhabitants of the villages within the Potoniny National Park. Traditional agricultural economy and the communities connected with it can still be observed in the Ukrainian



Glandular bittercress (C.Č.)



Mountain houseleek on the rock (C.Č.)



Hucul horses in the pasture (C.Ć.)

part of the Reserve. Among the semi-natural non-forest communities, more than 60 of different rank can be distinguished. The most common are one-crop bent-grass fresh meadows. One can also see the meadow with the prevailing cock's foot *Dactylis glomerata*, meadow foxtail *Alopecurus pratensis* or velvet grass *Holcus lanatus*. Dry slopes are covered with red fescue communities *Festuca rubra*. Retreating plant communities are represented by poor pastures with predominating mat-grass *Nardus stricta*. Very moist habitats are occupied by mires, sedges, reed and tall herb communities. There are also raised peat-bogs in the San, Wotosate and Wetlina rivers

valleys. They create habitat for very rare, in this part of Carpathians plants such as ledum *Ledum palustre*, marsh andromeda *Andromeda polifolia*, cotton-grass *Eriophorum vaginatum*, cranberry *Vaccinium oxycoccus* and common sundew *Drosera rotundifolia*.

More than 1000 species of vascular plants, more than 400 species of mosses and liverworts, more than 500 species of lichens and about 65 species of slime moulds were identified in the International Biosphere Reserve „Eastern Carpathians”. Further, about 1300 species of fungi and about 200 species of monocellular algae (best known are diatoms) can be found.

A large number of plants in the flora of the Biosphere Reserve are mountain taxa, which constitutes about 25% of the native plants. The most interesting are alpine species such as knotweed *Bistorta vivipara*, rock sedge *Carex rupestris*, alpine clubmoss *Diphasiastrum alpinum*, lower fescue *Festuca airoides*, paniculate saxifrage *Saxifraga paniculata*, mountain houseleek *Sempervivum montanum*, alpine bastard toadflax *Thesium alpinum*, giant catsear *Hypochoeris uniflora* and others show evidence of primary non-forest and high altitude character of the highest parts of the Bieszczady Mountains.



Giant catsear on the połonina (alpine meadow) (C.Ć.)



Young lynx (C.C.)

The species representing the eastern element (about 40 species) indicate affiliation of the Bieszczady to the Eastern Carpathians. A dozen or more of these are endemic species of Eastern and Southern Carpathians including Carpathian crowfoot *Ranunculus carpaticus*, white cow-wheat *Melampyrum saxosum*, Carpathian catchfly *Silene dubia*, east Carpathian monkshood *Aconitum lasiocarpum*, yellow monkshood *Aconitum paniculatum*, dwarf monkshood *Aconitum bucovinense*, rock pink *Dianthus carthusianorum* subsp. *Saxigenus*, east Carpathian larkspur *Delphinium elatum* ssp. *nacladense* and others.

International Biosphere Reserve „Eastern Carpathians” is one of the most valuable animal refuge in Europe. More than 300 species of vertebrates and about 10,000 invertebrate species were recorded. There are numerous populations of the rare on the continent predators: the brown bear, the wolf, the lynx and the wild cat connected for centuries with the forests of the Carpathians. There is a stable European bison population in the Polish and Slovak parts of Biosphere Reserve.

The rare and endangered species of birds of prey and owls can find suitable habitats including golden eagle, lesser spotted eagle, honey buzzard, eagle owl, tawny owl, pygmy owl and Tengmalm’s owl. In addition, in these relatively low mountains there are species of highland birds like nutcracker, common crossbill, three-toed woodpecker, water pipit and mountain accentor.

The most numerous reptiles are grass snake and viper. There is the only one Polish population of aesculapian snake in the San Valley Landscape Park. Aesculapian snake was also recorded in the southern part of the Reserve. The most common tailed amphibians (Caudata) are the Carpathian newt and fire salamander. The most abundant representatives of anuran amphibians are: yellow-bellied toad, European toad and common frog. The most common fish are the brook minnow and bullhead, which are the food basis for river trout, otter and black stork.

The „Eastern Carpathians” Biosphere Reserve protects a number of unique, in scale of Europe, invertebrate species. Among them are numerous endemic species occurring Carpatians, as well as a valuable relic species inhabiting the Carpathian forest. In this area, new invertebrate species have been described, including their locations as important documentation site (loci typici). Among the invertebrates described for the first time here are representatives of mayflies, caddis-flies and orthopterans. A very important element of the IBR „EC” fauna are forest, water and alpine meadow invertebrates.

Description of selected nature trails and hiking trails in individual protected areas of IBR „Eastern Carpathians”



Guides for education trails in BNP (B.Ć.)

Nature trails system in the Bieszczady National Park

There are 14 nature trails in the Bieszczady National Park, 13 of which are accessible to all park visitors, individually and in groups, including two cross-border paths. Nature trails are marked in the field by posts with a plate, on which is placed: green diagonal strip on a white background, graphical trail symbol, stop number and short text. Detailed descriptions of the trails can be found in the richly illustrated guide books - available at point-of-sale. Short descriptions of the individual stops on the trail can be found in the guide book, which is the component of the nature-touristic map of „Bieszczady National Park” and on the signs of stops located in the area. Each of the trails shows slightly different natural values of the Park. This publication only signals phenomena and natural processes which can be observed at individual stops of nature trails.

■ **Nature trail „Rozspaniec – Krzemień”**

The trail leads through the red hiking trail from Wołosate to Rozspaniec, then through Halicz alpine meadows and slope of Krzemień (stops 1-28). Return by the blue trail to Wołosate. Kopa Bukowska is the only site of Haller’s primrose (long-flowered primrose) found in Poland. This flower is a symbol of the path.

■ **Nature-historical trail „Wołosate - Tarnica”**

The path follows the blue trail from the old Boyko cemetery in Wołosate to the pass near Tarnica and along the yellow trail to the highest peak of the Polish Bieszczady (stops 1-25). During the hike one can observe the vegetation and climatic zones, plant communities, richness of plants and animals. On the path you can also find rare Eastern Carpathians and high mountain plants. The symbol of the path is the lesser spotted eagle.

■ **Nature trail „Bukowe Berdo”**

Bukowe Berdo is one of the most beautiful mountain ridges in the Bieszczady Mountains. The path of trail meanders among the rocky outcrops and shrubs with rowan. The path leads to the ridge by yellow trail from Muczne (stops 1A-6A) and the blue trail from Pszczeliny to the peak of Bukowe Berdo (stops 1-18). The symbol of the path is a rock pink - an endemic plant for the Eastern and Southern Carpathians.

■ Nature trail „Ustrzyki Górne – Szeroki Wierch”

The trail begins in Ustrzyki Górne, at the mouth of the Terebowiec brook valley and leads along red hiking trail to Szeroki Wierch alpine meadow (stops 1-26). Trail ends up at the pass near Tarnica, joining the nature-historical trail „Wotosate – Tarnica”. The symbol of the path is the spring snowflake, which in spring blooms in the Terebowiec valley, as a component of the Carpathian alder forest floor.

■ Nature trail Ustrzyki Górne – Wotosate

The trail was marked next to the tourist hiking trails along the valley of Wotosatka stream – from Ustrzyki Górne to peat bog “Wotosate” (stops 1-19). Initially runs along a stream, and then through meadows on the left side of the road leading to Wotosate. The symbol of the path is the fire salamander – a tailed amphibian found in moist habitats. Because of the high vegetation and horse grazing in the summer, we recommend visiting the path in spring and autumn.

■ Nature trail „Połonina Caryńska”

The trail runs along the red hiking trail from Ustrzyki Górne through Polonina Caryńska to Berehy Górne (stops 1-27). You can also go down the using green trail to Wyżniańska Pass (17A-24A) or to Bereżki (15B-24B). It shows us the layout of vegetation, while allowing admiring panoramic views from the summit. The symbol of the path is beech, most common tree species of Bieszczady.

■ Dendrology-historical path Berehy Górne

The trail runs through the former village of Berehy Górne, from the Wyżniańska Pass to the Wyżna Pass (above Berehy) (stops 1-18). We wander off hiking trails, using the old Boyko road, pastures and woods, looking for traces of history well preserved in the landscape of nature. The symbol of the path is a wild apple tree – a remnant of the Boyko orchards. Because of the high vegetation and sheep grazing in the summer, we recommend visiting the path in spring and autumn.



Markings of the nature trail (B.Ć.)



The area of the deserted Berehy Górne village (B.Ć.)

■ **Nature trail „Wielka Rawka”**

The trail leads along the blue hiking trail from Ustrzyki Górne to Wielka Rawka, further by the yellow trail to Mała Rawka, from where you can go down to the Wyżniańska Pass (1-46 stops) or through the Dział to Wetlina (stops 34A-43A). Rowan is a symbol of the trail, because it creates subalpine scrub communities on Rawki.

■ **Nature trail „Połonina Wetlińska”**

It leads along the red hiking trail from Berehy Górne to Orłowicz Pass and then along the yellow trail to Stare Sioto (stops 1-24). You can also go from the Wyżna Pass along the yellow trail (stops 1A-7A) and from the campsite „Górna Wetlinka” along the black trail (stops 1B-3B). The symbol of the path is an alpine globeflower - a rare Eastern Carpathians plant.

■ **Nature trail „Suche Rzeki – Smerek”**

It leads along the yellow hiking trail from Suche Rzeki to the Orłowicz Pass and then along the red trail to the top of Smerek (stops 1-20). You can also hike on Smerek trough the red hiking trail leading from Kalnica (stops 1A-8A). The fir tree is a symbol of the path, as it is found here more often than in other parts of the Park.

■ **Nature-historical trail „W dolinie górnego Sanu”**

The trail leads off the hiking trails along the vast and depopulated valley of the upper San river, to its sources in the area of Użocka Pass. The symbol of the path is the beaver, which was introduced here in the early 90s XX century.

■ **Cross-border nature trail „Wielka Rawka – Kremenaros – Nova Sedlica”**

The trail begins at Wielka Rawka and leads along blue hiking trail to Kremenaros, where is a border between Poland, Slovakia and Ukraine (stops 1-12). Next, along red Slovakian hiking trail, through the beech forests of the Carpathians, listed on UNESCO World Heritage List, leads to Nová Sedlica (stops 13-39). The symbol of the path is the largest Carpathian predator - brown bear.

■ **Cross-border nature trail „Wetlina – Rabia Skata – Runina”**

The path begins at the green hiking trail in Jawornik (stops 1-4) continues on the yellow hiking trail through Paportna to Rabia Skata (stops 5-25) then towards Dziurkowiec (stops 26-30). To Runina leads Slovak green hiking trail (stops 31-36). The symbol of the trail is *Rosalia alpina*, rare, protected insect associated with old beech trees.



„Połonina Wetlińska” nature trail (B.Ć.)



Hiking trail from Rawki to Kremenaros (B.Ć)

Main tourist hiking trails on the Polish side of „EC” IBR










- **Main Beskidy Trail, named after Kazimierz Sosnowski** leads from Komańcza to Wołosate. Among others it leads through "Zwieszło" nature reserve, the Chryszczata and Wołoszań mountain ranges, Jasło and Fereczata massif, Smerek, Wetlina and Caryńska alpine meadows, Szeroki Wierch, Halicz and Rozspaniec peaks. The length of the entire trail is 92 km, time of travel about 36 hours.
- **Blue trail in the Bieszczady Mountains** on the section of Nowy Łupków-Wielka Rawka is called border trail. Further, from Ustrzyki Górne through Tarnica and Bukowe Berdo leads to Ustrzyki Dolne. Among others along the trail: Wysoki Groń, Czerenin, Stryb, Sinkowa, Rypi Wierch, Okrąglik, Riaba Skąta, Wielka Rawka, Przełęcz pod Tarnicą, Bukowe Berdo, Magura Stuposiańska, Otryt. The border section is 68 km, the section of Ustrzyki Górne - Laworta is 68 km. Total travel time of 47 hours.
- **Blue trail from Sanok to Chryszczata.** Length: 33 km, travel time of 11 hours. On the route there is an orthodox church in Turzańsk included in the UNESCO list.
- **Blue trail from Baligród to Łopiennik by Durna.** Length approx. 12.5 km, travel time 4.25 hours.
- **Blue trail from Roztoki Górne to Wołoszań.** Travel time approx 4.75 hours.
- **Green trail from Bystre through Rabe to Chryszczata.** Travel time approx. 3 hours.
- **Green trail from Jawornik to Magura Stuposiańska.** Length approx. 21 km, Travel time approx. 9 hours. On the way: Dział, Mała Rawka, Wyzniańska Pass, Połonina Caryńska, Przystup Pass.
- **Green trail from Lesko to Kryswa.** Length approx. 52 km, Travel time 18 hours.
- **Green trail from Lutowiska to Otryt mountain ridge,** trail link with a length of 7 km, travel time approx. 1.75 hours.
- **Green trail Woronikówka-Berdo.** Length 4 km, travel time 1.5 hours.
- **Yellow trail from Zatwarnica – M. Orłowicz Pass, Wetlina, Jawornik – Raba Skąta.** Length 19 km, travel time 6.25 hours.
- **Yellow trail from Wyzna Pass to mountain shelter on the Połonina Wetlińska.** Distance 2 km, travel time 1.25 hours.



At the top of Tarnica mount (B.Ć)



Włosate – Tarnica hiking trail (C.Ć.)

-  **Yellow trail link Tarnica Pass – Tarnica.** Length 0.5 km with travel time approx. 15 min.
-  **Yellow trail link from Mała Rawka (1268 m a.s.l.) to Wielka Rawka (1304 m a.s.l.).** It links blue border trail with green trail Jawornik - Magura Stuposiańska. Length 1.5 km, travel time approx. 30 min.
-  **Yellow trail link Cisna – Pass over Roztoki.** Length 12 km, travel time approx. 3 hours.
-  **Yellow trail from Przystup Pass (final station from Bieszczady narrow-gauge railway) to Jasto,** travel time approx. 1.5 hours.
-  **Yellow trail from Berezki to Przystup Caryński Pass** with length of 2.5 km, travel time approx. 1 hour.
-  **Yellow trail from Muczne to Bukowe Berdo.** Length approx. 3 km, travel time approx 1.5 hours.
-  **Yellow trail from Maniów to Balnica.** Travel time approx. 2.25 hours.
-  **Black trail from Pass under Jaworne to M. Orłowicz Pass.** Length 30 km, travel time approx. 10 hours. On the way: Łopiennik, Falowa and Krysowa.
-  **Black trail from „Górna Wetlinka” campsite – link with yellow trail to mountain shelter on Połonina Wetlińska.** Length 2.5 km, travel time 1 hour.

Selected educational paths within the Polish part of the IBR „Eastern Carpathians” – outside the BNP area

The list below is not a complete list of educational, view, historical, etc. paths existing in the area, as there are many similar objects in the Polish Bieszczady, and their number increases year by year. We encourage to familiarize yourself with the tourist offer on touristic websites:

www.grupabieszczady.pl, www.twojebieszczady.net, www.bieszczady.net.pl, www.naszebieszczady.com, on the website of the Carpathian Landscape Parks (www.parkikrosno.pl), Bieszczady forest districts (www.czaswlas.pl) and local communes (www.lutowiska.eu, www.cisna.pl, www.czarna.pl, www.baligrod.pl, www.esolina.pl).

■ **Path Ecomuzeum „Trzy Kultury” (Three cultures)**, around Lutowiska – length approx. 13 km; historical and nature path; on the route: the Jewish cemetery, the ruins of the synagogue, the church and the Greek Catholic cemetery, the old Boyko hut, the neo-gothic church of St. Stanislaus the Bishop.

■ **Nature-historical path „Hylaty”** and ecomuseum „W Krainie Bojków” in Zatwarnica – length approx. 12 km; on the route; reconstruction of the Boyko hut, former water mill site, waterfall on the Hylaty stream, rock wall with numerous outcrops, Dwernik–Kamień peak, trenches from the times of the First World War.

■ **Nature-didactic path „Krutyjówka”** from Forest Promotion Center in Muczne to European bison demonstration enclosure; on the route, the valley of the Muczny stream, the non-existent settlement of Krutyjówka, the pillar of the narrow-gauge railway bridge.

■ **Nature-historical path „Brenzberg”** from the Forest Promotion Center in Muczne to the Jeleniowaty ridge (former forester’s lodge Brenzberg, the place of murder of 74 Poles by UPA).

■ **Nature-didactic path „Pichurów”** – to the viewpoint in the valley of the Rزتoki stream.

■ **The view path „Jeleni Skok”** in the Cisna Forest District, leading to the view tower.

■ **The view path „Sine Wiry”** in the Cisna Forest District, providing access to the nature reserve area.

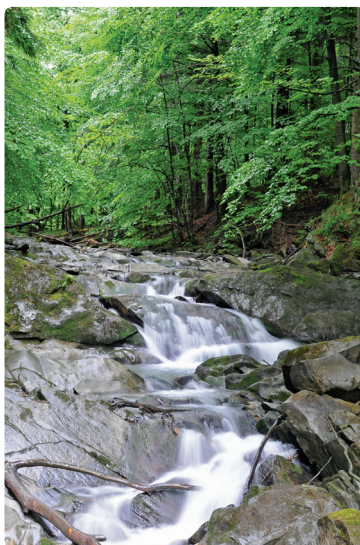
■ **Path from Bukowiec to the view tower on Korbania** in the Baligród Forest District.

■ **Nature path** in the Jabłonki forestry, in the Baligród Forest District – leading to the thickest Polish common fir tree named Lasumita.

■ **Nature path „Dolina Łopienki”** in Baligród Forest District.

■ **Otaczarnia in Bukowiec** – a walking path in the Baligród Forest District.

■ **Nature-didactic path „Hulskie”** in the Lutowska Forest District, providing access to the nature reserve area.



Cascades on the Hylaty stream (C.Ć.)



Sine Wiry Nature Reserve (C.Ć.)



The M. Poliszczuk educational path (M.B.)

■ **Nature path „Dwernik–Kamień”**

in the Lutowiska Forest District; path from Nasiczne to the top of Dwernik–Kamień.

■ **Nature path „Dwernik – Otryt – Chmiel”**

in the Lutowiska Forest District – approx. 6 km long, on the route two viewpoints.

■ **Nature – historical path „Nadsztonią”**

in Cisna – length approx. 5.5 km, on the route an old adit which once belonged to the Fredro family, used to extract iron ores.

Nature trails and paths on the Slovak side

■ **Educational path named after Miroslav Poliščuk**, 9.5 km long - the trail leads from Ulič along the former narrow-gauge railway and the old oak alley to the place called Valalština where in the past was a small hunting lodge. On the route, Holica Hill (538 m above sea level) with a lookout tower. Ing. Miroslav Poliščuk was a forester and founder of the first nature protection organization in Slovakia.

■ **School educational path leading to the „Merganc stone”** with length of 5 km in Ulič. The route passes through a historic park with a gallery of wooden sculptures, an exhibition dedicated to the Rusyn language (a Rusyn-Slovak dictionary under the open sky), and an educational playground- „Door to Poloniny”. The route ends at the monument to gamekeeper Rudolf Merganc, who was shot in 1922 by poachers.

■ **Rožok educational path** with a length of 3.75 km providing access to the area of the reserve of the same name with a beautiful old beech forest.

■ **The Ruské educational path** is located in the part of the territory of the Park where inhabitants were removed, above the Starina reservoir. It is 2.4 km long and starts in the village of Runina. The route runs next to the Šípková Nature Reserve and along fragment of the nineteenth-century road connecting Hungary with Galicia built in 1864-65 (the so-called „Porta Rusica”). In the short section recognized as a technical culture monument, we can see 7 old stone culverts and several stone posts with distance markings.



The Ruske educational path (I.B.)

■ **Educational path Havešová**, a 2.2 km long trail can only be visited with an employee of Potoniny National Park and provides access to nature reserve with the same name.



The Udava-Solinka path (P.G.)

■ **The educational path „Under the dark sky”** is located in Nowa Sedlica near the PNP Information Center and is 1.2 km long. Educational boards inform about the problems of starry sky parks and light pollution.

■ **The international forest path Udava-Solinka** starts in the town of Osadné with a length of 2.2 km leads through the Udava nature reserve.

-  **Red trail (along the ridge of Poloninian Carpathians):** Nová Sedlica – Krzemieniec – Riaba Skąta – Ruské Sedlo – Łupkowska Pass.
-  **Blue trail (route along the Rusyn route):** Runina – Smerekovica – Ruské – Ruské sedlo. Partly runs along the 19th century paved road from Hungary to Poland.
-  **Blue trail (Icon trail):** Uličské Krivé – Ruský Potok – Topoľa.
-  **Green trail:** Runina – Pass under Dziurkowiec.
-  **Green trail:** Nová Sedlica – Czertež.
-  **Yellow trail:** Osadné – Diakov – Balnica.
-  **Yellow trail (trail through the valley of the Głębokí stream):** Nová Sedlica – Medová baba – Riaba Skąta.
-  **Yellow trail (Three wells)** – from Runina to three healing springs – the place of the apparition of the Blessed Virgin Mary in 1936.
-  **Yellow trail:** Ulič – Mergancov kameň.
- **Cycling routes (Carpathian cyclomagistrala)** – Ruské sedlo, Starina reservoir, Stakčín, Ulič, Zboj.

Trails and ecological paths on the Ukrainian side of „EC” IBR

■ **Ecological-landscape path: „From the source of the Dniester river to the source of the San river”** in the Nadsyansky Regional Landscape Park.

■ **Ecological-landscape path: „From the monument of Ukrainian Sich Riflemen to Liskiiv”** – route from the Sich Riflemen monument in Sianki to the village of Beniowa in the Nadsyansky Regional Landscape Park.

■ **Ecological-landscape path: „On the routes of former villages. Dydiowa village”** in the Nadsyansky Regional Landscape Park.

■ **The „Pasiki” ecological path** runs in the Už river valley through the meadow saffron reserve *Colchicum autumnale*. On the route you can see the rocky thresholds on the river Už and the well-preserved beech forest.

■ **The ecological route „Arpad Line”** shows the remains of a defensive line built in 1943-1944 to protect the Kingdom of Hungary against the attack of the Red Army. Many kilometres of trenches were built on the slopes in this region and additionally 9 concrete bunkers were located here. Currently, the ruins of the fortifications are under the canopy of a lush beech forest.



The Irtaszi ecological path (M.B.)

■ **The ecological path „Bliznia”** north of the village of Stuzyca, is a short route through the wilderness. At the beginning it leads through a picturesque, rich meadows and further old beech forest. There is a small cave nearby.

■ **The ecological path „Irtaszi”** gives access to meadow saffron nature reserve *Colchicum autumnale* in the Uż river valley between the villages of Stawne and Łuh.

■ **The ecological path „Uż”** starts from the tourist information center in Użok and reaches the Użocka Pass. At the beginning of the route there are mineral springs which before the First World War were used for healing baths. The trail also shows interesting architecture along the railway line built in 1905.

■ **Ecological path Kniahynia village – Czarne Młaki wilderness – Dębowy Gaj tourist base**; route with a length of 14 km, red signs. It leads through the foothills of the Stinka mountain where there are pseudokarst caves and through Czarne Młaki wilderness – the place of the fall of the Kniahynia Meteorite.

■ **Tourist trail Kostryno – Jawornik mountain – Ruski Moczar village**; 8 km long route, red signs. It runs through the forest of primary character included into nature reserve and protected.

■ **Ecological path tourist base Dębowy Gaj – Gołania mountain (854 m above sea level) – Kostryno village**; 8 km long trail, green signs.

■ **Ecological path Żornawa – Parazyńskie wilderness – Żornawa** – a route with a length of 8 km, green signs around the valley of the Parazyński stream.

■ **Ecological path Żornawa – Pidzwonnyj wilderness – Stuzyca**, a trail with a length of 5 km, blue signs. The initial part of the path runs with the previous route. On the way, two sources of mineral water – natural monuments.

■ **Ecological trail Żornawa – Gołania mountain (854 m above sea level) – Żornawa**, route with a length of 4 km, blue signs. On the route fortifications of the „Arpad Line”.



The Czarne Młaki wilderness (M.B.)

■ **Ecological path Wyszka village – Kraszyn mountain (Kraszija) – Wyszka village**, 7 km long trail, gray signs. On the northern slopes, there are three chair-lifts with a length of 2,200 meters, while on the top of Kraszyn (1036 m above sea level) a cavity-type cave.

■ **Science and educational trail Stuzyca – Krzemeniec – Stuzyca**, 9 km route, red signs. The route is available only after consultation with the Uzahnskyi National Park management and the Ukrainian border guard.

■ **The ecological path Stużyca – Czarne Młaki wilderness – Stużyca**, route with a length of 5 km, red signs.

■ **The botanical and historical path Stawne – Czeremcha mountain – Łubnia**, route with a length of 5 km, red signs. It leads to the military cemetery from the First World War on the slopes and clearing at the top of Czeremcha (1134 m above sea level).

■ **Ecological path Łubnia – Wieża mountain (878 m above sea level) – Łubnia**, 10 km long trail, blue signs. Sycamore wood with Hart's tongue fern on the route.

■ **Ecological path Łubnia – Czeremcha – Menczyt – Łubnia**

– route with a length of 7 km, blue signs. It leads to the military cemetery from the First World War on the slopes and clearing at the top of Czeremcha (1134 m above sea level), three caves on the slopes of Menczyt (1008 m a.s.l.) – „Żiwanskie jamy”.

■ **Ecotouristic path Werchowyna Bystra – Pliszka – Łubnia**, 11 km long trail, gray signs. The trail to Pliszka (1068 m above sea level) – the northern slope of the mountain with a rocky fall - viewpoint to the Polish Bieszczady Mountains.

■ **Ecotouristic path Użocka Pass – Rozspaniec – Werchowyna Bystra** a route with a length of 21 km, blue signs. On the way Opołonek and Kińczyk Bukowski. The route is available only after consultation with the Uzhanskyi National Park management and the Ukrainian border guard.

■ **Route from tourist station Szczerbyn – Użocka Pass**, 7 km long route, green signs. Trip to the longest tunnel in Ukraine (904 m).

■ **Ecological path Użocka Pass – sources of the Uzh river – Użok** a route with a length of 9 km, blue signs. Cave “Żiwanska jama”, on the route.

■ **The ecological path Użok – the source of the San river – Użocka Pass**, a 2 km long trail, green signs.



View from Czeremcha to the Polish Bieszczady (M.B.)



Połonina Bukowska in Uzhanskyi NP (S.K.)

Description of selected natural attractions in the IBR „EC”



View of Krzemień (B.Ć.)

Nature attractions

The most interesting nature attractions of the region are undoubtedly the meadows, which like the islands emerge from the forest sea. They represent a small percentage of the surface area of IBR „Eastern Carpathians”, but in addition to picturesque scenery, the most valuable species of fauna and flora of high-mountain and eastern Carpathians character are located here.

Forests of primeval nature is the second natural value of the Reserve appreciated by granting the Slovak and Ukrainian beech woodlands the status of World Heritage by UNESCO (entry under the name „Primival beech forests of the Carpathians and other regions of Europe”). It is the best preserved remnant of the extensive fir and beech forests, so-called Carpathian Forest covering centuries ago slopes of this massif from the foot to the border of alpine meadows and high located pastures. These forests have preserved their natural character due to unavailability, distant location from markets and communication routes, and in the Polish part also due to mass displacement of people carried out after World War II. These ecosystems vary in the altitude gradient because they occupy positions from 600 m a.s.l. up to the upper tree line and pastures at an altitude of 1260 m. The lower parts are dominated by huge beech and fir trees, with trunks covered with epiphytic species of mosses and lichens. The oldest trees after being felled by the wind, disease or age become a home for a large number of rare species of invertebrates (about 7,000 species), mosses (about 300 species) and fungi (about one thousand species). In the highest parts, the forest takes the so-called “crooked” form specific to the region. The lack of mountain pine and spruce typical for upper montane zone makes crooked forest stand on the front-line with the harsh climate of the subalpine zone. Strong winds, heavy frosts and long-lasting snow cover make the annual growth of beech small, and old - often over a century old - tree specimens can take the form of a dwarf or a shrub. There are many gaps occupied by colourful herbs species in the crooked, dwarf stands.

Attractive for tourists ecosystems are also raised pit bogs - some of the most valuable and most sensitive habitats in IBR „Eastern Carpathians”. The layers of peat are several meters thick, and the history of peat form-

ing process goes back 10,000 years. They stand out from the landscape with “domes” elevated above the surroundings. There are specific species of fauna and flora here. On the outskirts often grows tussock cottongrass, bog billberry and wild rosemary. The elevated dome occupies the so-called mszary, or communities with a thick sphagnum pillow, on which small shrubs grow: bog billberry, bog rosemary, crowberry and in some places round-leaved sundew. Raised peatbogs were in the past threatened with drainage of waterlogged parts of the valleys.



The Tarnawa raised peatbog (C.Ć.)

Today, their lifespan is more often limited by the natural succession of shrub communities (e.g. with crumble) or forest (with spruce, birch and pine). Most peatbogs are found in the upper valley of the San river, both on Polish (10 bogs) as well as the Ukrainian side (few bogs). In Dydiowa, on the slopes of the Bałyta (Kiczera Popowa mountain), a raised peatbog that has never been drained is located, unique in the scale of the entire Reserve. Some peatbogs are available for tourists with the special footbridges for safe sightseeing, these are peatbogs in Wotosate and Tarnawa. The „Zakole” peatbog reserve, established in 1971, with the area of 5.25 ha, is not accessible for tourists.

Nature reserves and natural sites

Polish nature reserves

■ **“Cisy na Górze Jawor” Nature Reserve** – floristic reserve with area of 3.02 ha; created in 1957; partial; not available to tourists. It protects the natural site (around 300 trees) of the yew *Taxus baccata*.

■ **“Gołoborze” Nature Reserve** – geological site with area of 13.90 ha; created in 1969; partial; available to tourists by nature trail. The aim was to preserve the stone run, undergoing forest succession. There are also mineral springs.



Fruiting yew tree (B.Ć.)



The Duszatyńskie Lake in the Zwieżło Nature Reserve (C.Ć.)

■ **„Olszyna Łęgowa w Kalnicy” Nature Reserve** – forest area of 13.69 ha; created in 1971; partial; not available to tourists. It protects a fragment of mountain alluvial forest with black alder.

■ **„Przełom Ostawy pod Duszatynem” Nature Reserve** – landscape reserve with area of 322.45 ha; created in 2000; partial; not available for tourists – it is located directly next to the red trail on the Prełuki – Duszatyn section. It protects the gorge section of the Ostawy river valley together with the surrounding beech and fir woodland.

■ **„Sine Wiry” Nature Reserve** – landscape reserve with area of 450.49 ha; created in 1987; partial; available to tourists by forest road. A gorge section of the Wetlinka river valley and its estuary to Solinka river together with a landslide site from the 1980s on the slopes of Połoma are protected. There are diverse forest communities – fertile and acidophilous beechwoods, Carpathian alder wood, lindenhornbeam wood and sycamore wood.

■ **„Woronikówka” Nature Reserve** – floristic reserve with area of 14.84 ha; created in 1989; partial; available to tourists by a short path from the green tourist trail. It protects the natural habitat of the yew *Taxus baccata* and sycamore wood with Hart’s tongue fern *Phyllitis scolopendrium*.

■ **„Zwieżło” Nature Reserve** – geological site with area of 2.20 ha; created in 1957; partial; available to tourists by the red trail. It protects a landslide site with small lakes called „Jeziorka Duszatyńskie” formed as a result of landslide in 1907.

■ **„Zakole” Nature Reserve** – peat-bog reserve with area of 5.25 ha; created in 1971; partial; not available to tourists. It protects the vegetation of the raised peat-bog.

■ **„Krywe” Nature Reserve** – landscape reserve with area of 511.73 ha; created in 1991; partial; made available to tourists by the red trail. It protects a gorge section of the San river valley under the Otryt mountain ridge with interesting plant communities and rare species of animals (including colonies of the Aesculapian snake *Zamenis longissimus*).

■ **„Hulskie” Nature Reserve named after Stefan Myczkowski** – forest area of 189.87 ha; created in 1983; partial; available to tourists by the nature trail „Hulskie Reserve” and forest roads. It protects the well-preserved old beech and fir-beech forest (Carpathian beech) as well as the sites of rare and protected plant and animals species, for example Hart’s tongue fern *Phyllitis scolopendrium*.

■ **„Śnieżycza wiosenna w Dwerniczku” Nature Reserve** – floristic reserve with area of 4.94 ha; created in 2001; partial; not accessible to tourists, but next to the Dwernik-Smolnik road. It protects the rich sites of spring snowflake and wet meadows.

Slovak nature reserves

■ **Havešová National Nature Reserve** – forest area of 171.32 ha; created in 1964; 5th degree of protection; a tourist trail available exclusively with a guide to Poľoniny National Park. Located in the villages of Stakčínka Roztoka and Kalná Roztoka, it protects beech forests of primeval character with numerous additions of other trees such as sycamore, elm and ash. Breeding area of birds associated with old forests including the Ural owl *Strix uralensis* and the stock pigeon *Columba oenas*. The reserve is of great importance for scientific research of primary lower montane forests. UNESCO World Heritage Site.



Havešova Nature Reserve (I.B.)

■ **Jarabá Skala (Riaba Skala) National Nature Reserve** – forest and geological area of 359.94 ha; created in 1964; 5th degree of protection; available to tourists by the border trail, the yellow trail Raba Skala - Nova Sedlica and green trail Dziurkowiec - Runina. It is located within the villages of Zboj and Runina. Established to protect the natural rock outcrops in the flysch of the Carpathians, stands of rare plant species and natural sycamore and beech forests. UNESCO World Heritage Site.

■ **Plaša National Nature Reserve** – forest area of 110.8 ha; created in 1967; 5th degree of protection; available to tourists by the border trail. It protects the primary sycamore and beech forests in the Border Ridge around the Plaša peak (Plaša - 1162 m above sea level) in the village of Ruské. There are the purple hellebore *Helleborus purpurascens* sites here. Clearings in subalpine forests are places of nesting for water pipit *Anthus spinoletta*, and old forest is a nesting place for collared flycatcher *Ficedula albicollis*. UNESCO World Heritage Site.



Purple hellebore (M.B.)



The meadow reserve Pod Ruským (M.P.)

■ **Pod Ruským (Lúky pod Ruským) National Nature Reserve** – a meadow with an area of 11.14 ha; created in 1988; 4th degree of protection; not available to tourists, near the Ruské sedlo-Ruské-Runina blue trail. It protects semi-natural marsh meadows with tall herbs in the Cirocha river valley in the villages of Veľká Poľana and Ruské.

■ **Rožok National Nature Reserve** – forest with an area of 67.13 ha; created in 1965; 5th degree of protection; available to tourists by education path. Located on the border of the villages of Ulič and Uličské Krivé. It protects well-preserved beech forests with sycamore. The

area is of key importance for scientific research due to its permanent monitoring sites. UNESCO World Heritage Site.

■ **Stinská National Nature Reserve** – forest area of 90.78 ha; created in 1986; 5th degree of protection; not available to tourists. It is located in the Stinska Ridge (1 093 m above sea level) in Zboj. The area of the reserve includes primeval fir and beech forests as well as alpine meadows. The most famous species of this protected area is the Carpathian crowfoot *Ranunculus carpathicus*, endemic to the Eastern Carpathians, which occur in Slovakia only at this location.

■ **Stužica National Nature Reserve** – area of 761.49 ha; created in 1965; 5th degree of protection; available to tourists by the border trail, the red trail Krzemieniec-Nova Sedlica and the red trail Czertež Nova Sedlica. It is one of the most valuable protected areas in Slovakia. Its importance is to preserve the natural forest communities on a large area in the Nova Sedlica village. There are typical beech, fir, sycamore and sycamore with ash forests. UNESCO World Heritage Site.



View from Stinska to Kremenaros (M.B.)



Stužica Nature Reserve – UNESCO World Heritage Site (C.Č.)

- **Bahno Nature Reserve** – peatbog area of 2.78 ha; created in 1988; 5th degree of protection; not available to tourists. Located in the Zboj village. One of the most valuable low and intermediate peatbogs in the Bukowskie Wierchy. There are, among others: round-leaved sundew *Drosera rotundifolia* and milk-parsley *Peucedanum palustre*.
- **Borsučiny Nature Reserve** – forest reserve with area of 83.72 ha; created in 1993; 5th degree of protection; not available to tourists. Located on the border of the villages of Ruský Potok, Zboj and Uličské Krivé. It protects forest ecosystems of the primeval character with beech, fir, broadleaf lime and sycamore.
- **Borsukov vrch Nature Reserve** – forest area of 146.79 ha; created in 2015; 5th degree of protection; available to tourists by the border trail. It protects well-preserved beech and sycamore forests along the Border Ridge in the villages of Nová Sedlica and Zboj. UNESCO World Heritage Site.
- **Bzaná Nature Reserve** – meadow with an area of 15.46 ha; created in 1993; 4th degree of protection; not available to tourists, near the Prislop-Kolbasov road. Protects thermophilic meadows and pastures in the village of Kolbasov.
- **Gazdorán Nature Reserve** – meadow with an area of 17.3 ha; created in 1993; 4th degree of protection; not available to tourists - it is possible to reach by a dirt track from the Stakčín-Prislop road. The subject of protection are thermophilic meadow and shrub communities on the hill above the Starina reservoir in the village of Stakčín.
- **Grúník (Hrúnok) Nature Reserve** – forest area of 4.6 ha; created in 1982; 4th degree of protection; not available to tourists. The subject of protection are beech and oak forests in the type of oak-hornbeam woods with purple hellebore *Helleborus purpurascens*, which are located in the Cirocha river valley in Stakčín. The participation of thermophilic species such as blackening flat pea *Lathyrus niger*, bastard balm *Melissis melissophyllum* and winged broom *Genistella sagittalis* is characteristic.
- **Hlboké Nature Reserve** – forest area of 2.28 ha; created in 1988; 5th degree of protection; not available to tourists. It protects acidophilous beechwoods with greater wood-rush *Luzula sylvatica* with a significant proportion of fir and spruce at relatively low elevations (500 - 610 m above sea level) in the village of Osadné.
- **Ruské Nature Reserve** – a meadow with an area of 1.46 ha; created in 1988; 4th degree of protection; available for tourists – by the blue trail Ruské-Runina. The purpose of protection is to maintain thermophilic meadow communities with the winged broom *Genistella sagittalis* in Stakčín. In the moist, lower area bog spring with *Eriophorum latifolium* occur.
- **Stinská slatina (Slatinka pod Stinskou) Nature Reserve** – peat bog with an area of 2.76 ha; created in 1988; 5th degree of protection; not available to tourists. The object of protection is boggy-peat vegetation in the village of Zboj. A buckbean *Menyanthes trifoliata* and other bog species can be observed.



Sipkova Nature Reserve (M.P.)

■ **Stružnická dolina Nature Reserve** – forest with area of 2.24 ha; created in 1982; 5th degree of protection; not accessible to tourists - the road is adjacent to the reserve, available after obtaining special permission to enter the protection zone of the Starina reservoir. The subject of protection is the alder woodlands *Corylo – Alnetum incanae* in the village of Zvaly in the valley of the Stružnica stream with primrose *Primula vulgaris* sites. There is also southern common dogwood *Cornus sanguinea* ssp. *australis*.

■ **Šipková Nature Reserve** – forest and meadow with an area of 156.32 ha; created in 1993; 5th degree of protection; available to tourists by the border trail and the blue trail Ruské sedlo - Ruské (also Ruské nature educational path). It protects the montane zone meadows with Eastern Carpathian species and the surrounding primeval forests in the villages of Ruské and Smolník nad Cirochou. UNESCO World Heritage Site.

■ **Udava Nature Reserve** – forest area of 391.98 ha; created in 1982; 5th degree of protection; available to tourists by the border trail and the international educational trail Udava-Solinka. It protects well-preserved natural complexes of fir and fir-beech forests in Osadné. Due to the favourable climatic conditions, the firs reach a considerable size here. UNESCO World Heritage Site.



Henbane bell (C.Č.)

■ **Uličská Ostrá Nature Reserve** – forest area of 25.24 ha; created in 1993; 5th degree of protection; not available to tourists, just by the Kolbasov-Ulič road.

It protects forest communities in the valley of the Ulička stream in the villages of Kolbasov and Ulič, with Eastern Carpathian species such as purple hellebore *Helleborus purpurascens*, telekia *Telekia speciosa* and henbane bell *Scopolia carniolica*.

■ **Ulička natural site** – forest area of 7.25 ha; created in 1975; 4th degree of protection; not available to tourists. It protects the valley of the Ulička foothills stream along with riverine communities and the stand of ostrich fern *Matteuccia struthiopteris*.

Ukrainian nature reserves

■ **Góra Jawornik National Nature Reserve**

– botanical with area of 100 ha; created in 1993; available for tourists by blue trail Kostryno - Jawornik - Ruski Moczar. It protects well-preserved beech and sycamore-beech forests. It is of great scientific importance due to the monitoring sampling sites of prof. Alois Zlatník from 1930.

■ **Tichij Nature Reserve** – forest area of 25 ha; created in 1969; available for tourists by green trail from Tichij to Lysyna (1153 m a.s.l.). Created to preserve over 200 years old beech and fir-beech stands.

■ **Dubova Nature Reserve** – forest area of 3.1 ha; created in 1969; not available to tourists. The subject of protection are woodlands of durmast oak *Quercus petraea* near the village of Sil.

■ **Uliczanka Nature Reserve** – forest with an area of 9.6 ha; created in 1969; not available to tourists. Protects the old pine and oak stands located south of the village of Sil.

■ **Gotania Nature Reserve** – botanical reserve of 89.4 ha; created in 1990; available to tourists by the blue trail from Kostryńska Roztoka to the top of Domaszyński Wierch (987 m a.s.l.). It protects beech forest with fir, sycamore and ash, located north of Kostryno under the Domaszyński Wierch mountain. The forest floor is rich in henbane bell and perennial honesty.

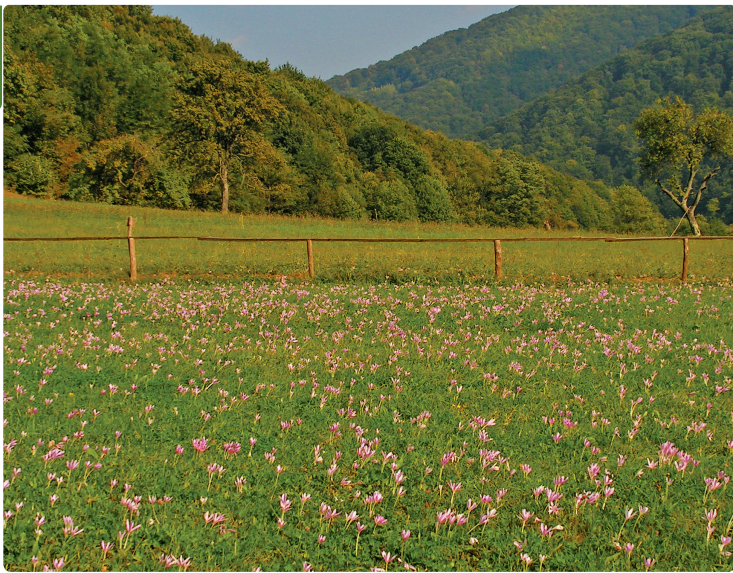
■ **Ertaszi (Irtaszi) Nature Reserve** – botanical reserve with area of 2.1 ha; created in 1990; available by the red educational trail „Irtaszi” from Stawne. It protects a meadow with meadow saffron *Colchicum autumnale* in the Už river valley between Stawne and Łuh. The subject of protection of the forest part is one of the oldest pine experimental site in the Ukrainian Carpathians. The trees were planted here in the 19th century.



Old beech trees (C.Č.)



Durmast oak (C.Č.)



Irtashi Nature Reserve (M.B.)

■ **Pasiki Nature Reserve** – botanical reserve with area of 1.2 ha; created in 1990; available to tourists by the red educational path „Pasiki” from the village of Zabródź (by the road Wielki Berezny – Użocka Pass). It protects the abundant meadow saffron *Colchicum autumnale* site.

■ **„Oak – Champion” Natural Monument** – one of the oldest oaks in Ukraine, whose age is estimated at 1,300 years. It is situated in the village of Stuzica. The circumference of the trunk - 9.6 m, diameter - 3.0 m, height - 30 m. In the neighbourhood „Oak - grandfather” is located with age of 1100 - 1200 years, height - 30 m and trunk circumference - 9.1 m.

■ **„Kniahynia Cave” Natural Monument** – a pseudo-kars cave about 40 meters long on the southern slope of Stinka mountain. Created as a result of flushing carbonate layers situated in the flysch rocks from the Cretaceous period.

Other interesting objects of “EC” IBR

■ **Wilderness site „Czarne Młaki”** – Place of the fall of the famous Kniahyński Meteorite on June 9, 1866. The meteorite broke up in the air into over 1000 fragments. The largest one, weighing 279.8 kg, was found in Czarne Młaki by a peasant from Kniahynia and sold to the Museum of Natural History in Vienna. The commission of scientists directed to this area scrupulously collected all information and fragments. Remains of the Kniahyński meteorite are now stored in over 100 museums in the world.

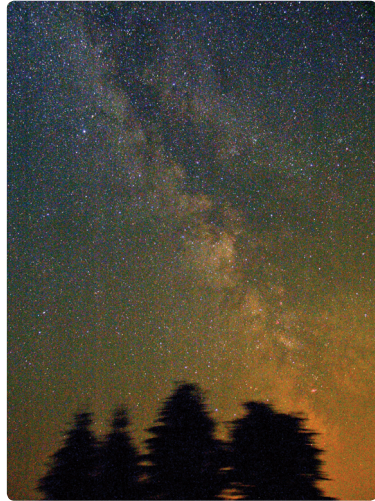
■ **Arboretum in Wielki Berezny** – park, founded in 1866 with 250 species and varieties of trees, including ginkgo and Canadian pine.

■ **Użocka Pass** – separates the Western and Eastern Bieszczady mountains. On the northern side of the pass, there are the springs of San river, and on the south – Uż river. From the north the approach to the pass is (relatively) gentle, while from the south the slopes steeply fall into the Uż valley. From the viewpoint at the pass, one can observe the panorama of the Uzhansky National Park.

■ **A European bison demonstration enclosure in Muczne** – in the Muczne forestry district, by the Stuposiany - Tarnawa Niżna road, about 2 km before the village of Muczne.

■ **Dark Sky Park** – the area of the Biosphere Reserve belongs to the least polluted in terms of light areas in the whole Europe, hence it is a great place to conduct astronomical observations. An initiative to protect such areas called dark sky parks allows amateurs and professionals to conduct interesting observations. The astronomical observatory and the small planetarium are located near the southern boundary of the Poloniny National Park on the Kolonicke sedlo.

■ **„Miodowa Baba” glade** – a clearing with a 7-meter sycamore sculpture commemorating Zofia Mataszowska’s life and work, a lady who for several decades in the Zbojski stream valley led a large apiary.



Starry Sky Park (P.R.)

■ **Caves** – in the Carpathian flysch they most often have their genesis in mass movements (fracture caves) or less often are associated with flushing of softer rock layers (pseudokarst caves). They are not open to the public but they are a very important habitat for numerous species of bats. On the Polish side, the largest caves are: in Nasiczne (60 and 28 m in length), Dydiowska Jama (28 m). The longest on the Zakarpattian side are the pseudokarst caves in the Stinska massif - the Ďakova cave (126.5 m), the Pustajova cave (28 m) and the Slovak-Ukrainian Kňahyňa cave (60 m).

■ **Krzemieniec** – symbolic place - three-state border point and, at the same time, the meeting place of the Polish, Slovak and Ukrainian part of the Biosphere Reserve. The highest point of the Bukowskie Mountains. The western culmination of Krzemieniec (1208 m), the place where the borders of Poland, Slovakia and Ukraine meet.



View point on the Użocka Pass (S.K.)

Cultural heritage of the International Biosphere Reserve „Eastern Carpathians”



Landscape of the Hostovice village (G.L.)

The Polish-Slovak-Ukrainian borderland is distinguished not only by unique nature but also by exceptional cultural values, shaped over centuries by the influence of two great civilizations - western (Latin) and eastern (Byzantine). The origins of multi-religious and multi-cultural tradition of the area dates back to the fourteenth century, when the colonization of these lands began with culmination in the sixteenth century. In the highest mountain backwoods, in the Polish-Hungarian borderland, settlement of Walachian-Ruthenian culture was developed, associated with Orthodox Christianity and the after the adoption of the Unions (Brzeska 1596 and Užgorodzka 1646) - the Greek-Catholic. In the valleys, however, where there were favorable conditions for the development of agriculture, Polish and Hungarian settlers, belonging to the Roman-Catholic Church, settled down. Starting from the sixteenth century, there was an increase of the Jewish population in villages, in which trade, timber and oil industry was developed.

Each of the religious groups living in mutual respect and understanding, left a trace in surrounding landscape in the form of sacral objects. In the landscape, manors belonging to owners of the villages were attracting attention. In such places the political, cultural and social life of the time was vibrant.

Arrangement of the village remained in balanced connection with terrain, a network of rivers and vegetation. Villages belonged to the so-called „łańcuchówka” (having the shape and structure of the metal chain), in which the density of buildings to the half of twentieth century steadily increased covering tighter bottom of valleys. During the several centuries of existence of the village, a model of the distribution of the most important spatial and cultural objects, such as the manor, church, cemetery and tavern, was developed. In such configuration of the village sacral objects and places were incorporated. The cemeteries were localized in area surrounding the church. The whole was surrounded by a fence with a ring of old trees – limes, ash or larches. Most of the churches were located on flat areas of the slope and the highest terraces far from the village noise. Submerged in the greenery churches were the most beautiful part of rural cultural landscape. In the mid-19th century, there were over 110 Christian temples in the area, of which 15 were located in the Slovak part of Biosphere Reserve, 31 in the Ukrainian and 68 in the

Polish part. The tragic period for the inhabitants of the region occurred in the 20th century, when this area became the „arena” of war struggles during several conflicts. The most important of them are the First World War, the Polish-Ukrainian War (1918-1919), Hungarian-Slovak War (so-called Little War) in 1939, Second World War and the struggle against the Ukrainian Insurgent Army (UPA) in years 1944-1947. Today, cemeteries and monuments from the First and Second World Wars testify to these tragic fights. For the inhabitants of the Polish part of the region, the breakthrough was



Church in Turzańsk (G.H.)

Second World War and deportations of the population in the border zone carried out by the Soviet and German authorities, and then displacement of inhabitants in 1946 and 1947 (so-called „Wisła” action). They have led to large losses in material culture, especially in the south-eastern part of the region, where the long-standing history of this area is visible today by the overgrowing foundations of cottages, manors and churches, abandoned cemeteries and roadside crosses, as well as wild orchards, balks and runners. For the Slovak part of IBR „EC” the biggest changes took place in the 1980s, when the inhabitants of seven villages were displaced for the construction of the Starina water reservoir. The buildings were mostly destroyed, leaving only cemeteries and few roadside crosses.

Despite the large losses in resources, the cultural heritage of the Polish-Slovak-Ukrainian borderland is distinguished by its high values due to the multicultural character that attracts many tourists. Recognition and understanding of such culture requires referring to the beginnings of settlement and tracing its course throughout history.

The most important historical buildings of this area are sacral objects - wooden churches from the 17th and 18th centuries, of which three objects were



A site of manor buildings in Berehy Gorne (G.H.)



Church in Smolnik (B.Ć.)

included in the UNESCO World Heritage List in 2013. This prestigious distinction on the Polish side of IBR „EC” was given to two churches - in Smolnik upon San river and in Turzańsk and on the Ukrainian side - in Użok. Churches were located on the highest terraces far from the village noise and were the most beautiful part of rural cultural landscape. Their grounds were surrounded by a stone wall or wooden fence, within trees were planted, erected free-standing bell towers and cemeteries located.

To the most valuable historical buildings in the Polish part of IBR „EC” belongs the former Greek Catholic church in Smolnik (now Roman Catholic church of the Assumption of the Virgin Mary) from 1791. It is an example of a Boykotype church, which was one of the oldest architectural forms of Rusian Orthodox churches. These were wooden temples, built on a longitudinal plan with a three-way division. Each part of the building was covered with a separate, tent roof, which from the outside gave the impression that they constitute a separate building. The dominant element was the wide nave, and the whole building was surrounded by a roof supported on the wooden beams, called “soboty”. The former Greek Catholic church in Turzańsk (now a branch of the Orthodox Church) built in 1801-1803 is considered to be the Lemko church of the north-eastern type. It is a wooden temple, with a timber construction. The plan of the church is tripartite and consists of a presbytery from the east, along with two sacristies, then a wider nave and a women’s gallery (babiniec) with a vestibule (kruchta). The decorations of the temple are towers with onion-shaped helms with apparent lanterns and spherical turrets over the sacristies. On its axis, from the west, there is a freestanding wooden bell tower of a pole-frame construction.

In the Poloniny National Park, the most valuable historical buildings are wooden churches of the Eastern rite. Particularly interesting are churches from Nowa Sedlica (mid-eighteenth century) - now in the Vihorlat Museum in Humenne) and Zboje (second half of the eighteenth century) - now in the Szaryskie Museum in Bardejov - Uzdrowisko. These are wooden three-part buildings, with a small presbytery, a wider nave and a women’s gallery with a tower of timber construction. Each of the three elements is decorated by towers with onion-shaped helms ending in straight club crosses. There is a wooden St. Michael Orthodox church in Topola from the middle XVII century. It is a small church with a three-part division, covered with a large single-ridge

roof, which together with an additional eaves supported by poles, creates a picturesque arcade. Inside, there is a baroque iconostasis and an exhibition dedicated to Aleksander Duchnowicz, born in Topola (1803-1865) – a Uniate priest and a known Ruthenian poet. In Ulickie Krive, there is a wooden St. Michael the Archangel church from 1778. Inside, there is a unique iconostasis from the eighteenth century and icons in Byzantine style from the older temple. In Ruski Potok, a wooden St. Michael the Archangel Orthodox church from the second half of XVII century draws attention. In the village of Ruska Bystra, at the border of the Poloniny NP, there is a wooden church of relics of St. Nicholas from the 18th century. In 2008, it was inscribed on the UNESCO World Heritage List. It is wooden three-part building with single ridge



Icon of St. Michael in the village of Ulickie Krive (G.H.)

roof and a women's gallery with a low tower of timber construction. Inside, there is richly decorated iconostasis partition, with icons from the eighteenth century. In the area of the former village of Ruskie, an original fragment of a stone road built in 1864-1865 has been preserved. The road led through Pass under Roztoki to the small town of Baligród on the Polish side. In the highest section on the pass, it reaches an elevation of 247 m and includes 16 curves. The course of the route refers to the old trade route used probably already in the first centuries of our era, as evidenced by the coins of Roman Emperor Hadrian (117-138) known from Cisna. In the past, near the village of Ruskie, an Orthodox monastery was located. Cirocha - the main river that drains the area of the Poloniny National Park begins here.



Iconostasis in the church in Ruska Bystra village (M.B.)



Church in Kostrino (G.H.)

The most valuable historical building inscribed on the UNESCO World Heritage List in Uzhanskyi National Park is the Orthodox church in Użok from 1745. This is a three-part church of the timber construction in the Boyko type, with a tower built over the women's gallery. Inside, there is an iconostasis from the 18th century. In the village of Kostrino there is a wooden church of St. Mary, Mother of God from 1645, which was moved here from Sianki (on the Polish side) in 1703. In 1761, a tower was added over the women's gallery. Iconostasis from 1596 can be seen inside. Church from Sianki (Poland) was also moved in 1777 to the village of Sól (Sil') - Uzhanskyi NP. This wooden temple of St. Bazyl the Great comes from 1703. The present look is the result of reconstruction in 1834 and today it is a unique example of a tripartite church with a bell tower placed over the women's gallery. An interesting event is connected with the village of Kniiazinia, where on June 6, 1866, one of the largest meteorites in Europe fell. The largest fragment weighed 279.8 kg and is now exhibited at the Museum of Natural History in Vienna.

In the Nadsyansky Regional Landscape Park, the most valuable historical building is the wooden Orthodox church of the Holy Mother of God from 1788 in Jablonka Wyżna. The Orthodox church is tripartite, oriented, with two krylost adjacent to the nave. Other objects with the status of heritage of material culture are Orthodox churches in the following places: Jablonka Niżna (church of Transfiguration of Jesus, 1820), Tureczki Wyżne (church of St. Pantaleon, 1890), Boberka (two churches of Raising the Lord from 1913 and of Michael the Archangel from 1914), Tureczki Niżne (church of Dormition of the Mother of God, 1914), Dniestrzyk Dębowy (church of Mother of God/Holly Jesus Heart, 1920), where until now unique icons of the Rybotycka school and liturgical books have survived from the old, no longer existing Boyko wooden churches.

Important elements of cultural heritage are also preserved traces of objects related to the achievements of technology and industry. A particular testimony of historical development was the network of narrow-gauge railways, with the use of which wood was supplied to small factories and to standard gauge railways. Only fragments of embankments, bridgeheads and sections of the track (Moczarne) remained from the former infrastructure of the railway. More infrastructure has been preserved in the Ciśniańsko-Wetliński Landscape Park (entered into the register of monuments), where tourist trips are organized along the routes: Majdan- Przystup and Majdan - Balnica.

Overview of the most interesting cultural objects in IBR „EC”

Poloniny National Park and surroundings (Slovakia)

■ **Dara – brick church**

Brick Orthodox church of St. Mother of God, built in 1956 according to plans by the Orthodox monk Andrej Kolomacký in old-Russian, historical style. It is the only temple that has survived in the area of displaced villages, in connection with the construction of the Starina water reservoir.

■ **Dúbrava – palace with a historic park**

The old-baroque palace, erected in 1763 by the Vercseniov family. The vast park that surrounds palace is the most important dendrological park in the region. At the brick Greek Catholic church, the largest tree in the region grows – durmast oak (*Quercus petraea*).



Palace in Dubrava village (M.B.)

■ **Jalová – wooden church**

Wooden Greek Catholic Orthodox church of St. George, from 174. Until the renovation in the 90s of the twentieth century, it was covered with clay, giving the impression that it is made of stone. Inside, there is an iconostasis from the 17th century.

■ **Hrabova Roztoka – wooden church**

Wooden Orthodox church of St. Bazyl the Great from the 18th century. Decorated with icons from the 18th century. The peculiarity of the temple are onion-like towers, covered with shingles in the shape of fish scales.

■ **Kalná Roztoká – wooden church**

Wooden Greek Catholic church of St. John the Baptist from the eighteenth century. Inside icons from the XVI-XVIII centuries. There are icons here, which in 1773 were transported from a Matoberezański monastery (currently Ukraine). The timber walls, outside and inside, are covered with clay and painted white.



Church in Kalná Roztoka village (M.B.)



„Three wells” – Runina (M.B.)

■ **Kolbasov – Jewish cemetery**

One of not many, preserved Jewish cemeteries, used from the 18th century until the Second World War. Only about 10 original sandstone tombstones (called „macewa”) have survived till today.

■ **Nová Sedlica – village house**

Traditional, timber house from the first half of the twentieth century. Inside, there is a three-room layout including a room, entrance (sieň) and a chamber. The whole is covered with a traditional hipped roof made of straw (thatch).

■ **Osadné – church with a morgue**

Kostnica (crypt) is located under the presbytery of the Orthodox church built in 1930. Bones of 1,025 soldiers from World War I were laid in the crypt. A monument was erected at a nearby cemetery where more 1473 soldiers were buried, whose bodies could not fit into the crypt.

■ **Runina – three springs**

An important place for the Orthodox Church – a place of revealing the Mother of God in 1929. Water springs from three sources and healing properties are attributed to them. In recent years, a chapel dedicated to Począjowska Mother of God was erected.



Jewish cemetery in Runina (M.B.)

■ **Runina – Jewish cemetery**

One of not many, preserved Jewish cemeteries, used from the 18th century until the Second World War. About 20 original sandstone tombstones (called „macewa”) have survived till today.

■ **Ruská Bystrá – wooden church**

Wooden Orthodox church of transfer of the relics of St. Nicholas the Bishop, built in the 18th century. The furnishings comes from the turn of the seventeenth / eighteenth century. The church was entered in 2008 on the World Heritage List, along with other 7 wooden churches and Orthodox churches of the Carpathian Arch.

■ **Ruská Volová – zbrojnická skata (Robber's rock)**

On the ridge of the Nastaz summit, under the peak Kopyto, there is the rock of Fedora Hlavatého (Holo-
vatého). From the times of robbery
activity of the gang Hlavatého from
Ruska Volova, an important docu-
ment has survived - Bardejowski let-
ter of June 25, 1493.

■ **Ruské – Stone route and Monastery**

Trade route near the village of
Ruske, about 4 km long, built in
1864-1865. In the highest section on
the pass, it reaches an elevation of
247 m and includes 16 curves. The
course of the route refers to the old
trade route used probably already in
the first centuries of our era, as evi-
denced by the coins of Roman Emper
or Hadrian (117-138) known from Cisna.
In the past, near the village of Ruskie,
an Orthodox monastery was located.
In the area of the former village, the
Cirocha river begins its run, and at its
sources a monument of liberators from
the Second World War was erected.

■ **Ruský Potok – wooden church**

Wooden Orthodox temple dedicated
to St. Michael Archangel from the
second half of XVII century. The fur-
nishings comes from the turn of the
17th and 18th centuries. The original
stone altar deserves attention.

■ **Stakčín – Barankowy bridge**

The largest bridge preserved on the
route of the former forest narrow-gauge
railway Stakčín - Strihovec. It was
built in 1913, and it is named after
the builder.

■ **Stakčín – mansion with a historic park**

Originally a rococo mansion, erected
in the second half of 18th century,
it was rebuilt in the 40s of the 19th
century, and in the second half of the
19th century - extended by a back
track in neo-Gothic style. It is sur-
rounded by an English-style park with
the largest 300-year-old oak with a
circumference of 553 cm. In front
of the manor there is a monument
dedicated to Aleksandr Duchnovič,
the most prominent representative of
the Ruthenians in Slovakia.



Church in the village of Ruský Potok
– a fragment of furnishings (M.B.)



Barankowy bridge – Stakčín (M.B.)



Jewish cemetery in the village of Topola (M.B.)

■ **Stakčín – brick church**

Brick Orthodox church of the Holy Ghost, built in 1955 according to plans by the Orthodox monk Andrej Kolomacký in old-Russian, historical style.

■ **Šmigovec – wooden church**

Wooden Orthodox church of the Ascension of the Lord, built in 1775-1780. It was renewed in 1894, 1936 and 2013-2016.

■ **Topoľa – wooden Orthodox church with an exhibition dedicated to Aleksandr Duchnovič**

Wooden Greek Catholic church of St. Michael Archangel, from the middle of 17th century. Icons inside from the middle of the 19th century. Currently there is a small exhibition of the history of the Greek Catholic church in Slovakia and important figure of Alexandr Duchnovič (1803-1865), born in Topoľa, Greek Catholic priest and known Ruthenian poet.

■ **Topoľa – Jewish cemetery**

The best preserved, the largest of Jewish cemeteries, which was used from the eighteenth century to the period of the Second World War. At present, almost 60 gravestones from sandstone have been preserved.

■ **Ulič – Arpad's line**

A fragment of fortification system, built in the years 1943-1944 in the region of Snina, which after the Small War was occupied by the Hungarians. Many objects have survived – shooting ranges, anti-tank barriers, bunkers with a trench system.

■ **Ulič – minigallery of the churches**

Minigallery with replicas of preserved and non-existent wooden churches from the area of Poloniny National Park. Of these, it is worth paying attention to the miniature of the very valuable church of St. Nicholas the Bishop of Ulič, destroyed in the second half of 19th century.

■ **Uličské Krivé – wooden church**

Wooden Orthodox church of St. Michael the Archangel, built in 1778, with rich furnishings. The beautiful and richly decorated iconostasis comes from the eighteenth century. Icons are in the Byzantine style from the older church.

■ **Uličské Krivé – monastery of the Transfiguration of the Lord**

An important place for the Orthodox Church in Uličske Krivé. The monastery-chapel of the Transformation of the Lord was built by the Orthodox monk Ihnatij Čokina, according to the example of monks living on the Holy

Mount Athos in Greece. His body was placed in a grave, located at the entrance to the monastery.

■ **Beskid Pantheon**

The original symbolic cemetery of famous figures from Połoniny who were born here, lived or worked. The sign, at the turn from the main road towards the village of Jalová informs about eight people that left their impressive mark in history.

■ **Veľká Poľana – ruins of the church**

By the war cemetery of Veľká Poľana – rotunda, there are ruins of the Greek Catholic church of St. Michael the Archangel from 1784. The church was damaged during the fights of I World War and since then remained in ruins. There is an old well named after Orest Dubay – an outstanding Slovak graphic designer of Ruthenian origin.



Kniahynia – Czarne Młaki (M.B.)

Uzhanskyi National Park (Ukraine)

■ **Husnyj – wooden church**

Wooden orthodox church of St. Nicholas Bishop, from 1655. It was rebuilt to a modern look in 1751-1759. The interior furnishings come from the time of the construction of the temple.

■ **Kostrina – wooden church**

Wooden Orthodox church of St. Mary, Mother of God from 1645, which was moved here from Sianki (on the Polish side) in 1703. In 1761, a tower was added over the women's gallery. The interior furnishings come from the older church.

■ **Kniahynia – Czarne Młaki**

The place of the fall of one of the largest meteorites in Europe, which was named Kniiazinia. The event took place on June 6, 1866. The largest of the meteorite fragments weighs nearly 279.8 kg and is displayed at the Museum of Natural History in Vienna.



Church in Kostrino village – a fragment of furnishings (M.B.)



Użocka Pass - view towards Zakarpattia (G.H.)

■ **Lubnia – Jewish cemetery**

The best preserved Jewish cemetery (kirkut), used from the 18th century to the period of the Second World War. Nearly 30 tombstones have survived to this day.

■ **Matyj Bereznyj – monastery**

Monastery (monastyr) of St. Bazyl was founded in 1656. Brick Orthodox church of St. Trinity was erected in 1742. Inside, there is the icon of the Mother of God from 1453, which was originally transferred from Constantinopol to Rome, and in 1926 donated by Pope Pius XI to Mukaczewski Greek Catholic Episcopate.

■ **Sil' – wooden church**

Wooden Orthodox church from 1703 of St. Bazyl the Great, which was moved in 1777 from Sianki (Poland). Rebuilt to its current state in 1834.

■ **Suchyj – wooden church**

Wooden Orthodox church from 1679 of St. John the Baptist. Inside, there are icons from 1678 and 1679.

■ **Stavne – Arpad's line**

A fortification system, built in 1943-1944 in the land of Podkarpacka Ruś, to protect the Kingdom of Hungary against the attack of the Red Army. Many objects have survived here - shooting ranges, anti-tank barriers, bunkers and a vast system of trenches.

■ **Użok – Spa**

Mineral springs, where a spa was built in the 19th century. It was destroyed during the fights of I World War. In their yard stood a fountain with a statue of Hercules, which was moved to the courtyard of the castle in Uzhgorod. Currently, the spa is being renovated.

■ **Użok – Użocka Pass**

Strategic Carpathian pass (852 m a.s.l.). In 1905, a railway line connecting Hungary and Halicz was led through the village. It consists of 6 tunnels with a total length of 2.27 km and 5 viaducts, the largest of which is 39 m high.

■ **Użok – wooden church**

Wooden Orthodox church from 1745 of St. Michael the Archangel. The furnishings comes from the 18th century. At the church the bell tower from 1927 is located. The church was inscribed on the UNESCO World Heritage List in 2013.

■ **Wielki Bereznyj – Javornik**

Hill with beautiful views (1017 m a.s.l.). House of the former Czechoslovak Tourists Club, built in 1936 is located here.

■ **Wielki Bereznyj – historical park**

The historical park was founded in 1866, with an area of 2.5 ha. About 250 species of trees grow in it. Special attention should be paid to species such as ginkgo (*Ginkgo biloba*), Douglas-fir (*Pseudotsuga menziesii*), Canadian pine (*Tsuga canadensis*) and durmast oak (*Quercus petraea*).

■ **Wielki Bereznyj – brick church**

Brick Roman Catholic church from the late nineteenth century. It was built for Slovaks who were resettled here in 1788 from the town of Lip-tovská Teplička.

■ **Wyszka – wooden church**

Wooden Orthodox church of St. Michael the Archangel from 1700. Renovated in the eighteenth century. The furnishings comes from the period of construction of the temple.

■ **Nadsyansky Regional Landscape Park (Ukraine)**

■ **Boberka Wyżna – wooden church**

Wooden Orthodox church from 1913 dedicated to the Raising the Lord. Built according to the design of the architect Basil Nahirny in the so-called national style (on the plan of the Greek cross, with the central dome).

■ **Boberka Niżna – wooden church**

Wooden church from 1914 of St. Michael the Archangel, in the so-called national style.

■ **Dniestrzyk Dębowy – wooden church**

Wooden church of Mother of God/Holly Jesus Heart from 1920, where until now unique icons of the Rybotycka school and liturgical books have survived from the old, no longer existing Boyko wooden churches.



Javornik (1017 m a.s.l.) – M.B



Church in the village of Boberka (G. H.)



Church in the village of Jabłonka Wyżna (G.H.)

■ **Jabłonka Wyżna – wooden church**

Wooden church from 1788 of Temple of the Mother of God, tripartite, with two vestibules adjacent to the nave, erected on a square plan. Nowadays a vestibule finished with siding was added from the front.

■ **Jabłonka Niżna – brick church**

Brick church from 1820 of Transfiguration of the Lord. Inside, a side altar with the image of the „Transfiguration of the Lord” from the old church, dated back to 1786, has been preserved.

■ **Tureczki Wyżne – wooden church**

Wooden church from 1890 of St. Pantalejmon. Inside the church, there is a four-level iconostasis from 1927.

■ **Tureczki Niżne – wooden church**

Wooden church from 1914 of Dormition of the Mother of God, built in the so-called national style.

In the villages located in the Park, there are traditional, wooden Boyko buildings - single-walled farms so-called „long huts”, combining residential and agricultural functions under one roof. One of such huts from the village of **Szandrowiec**, built in 1909, was transferred to the Museum of Folk Architecture in Lviv by the initiative of metropolitan Andrzej Szeptycki in the 1930s.

Bieszczady National Park

The cultural resources of the Bieszczady National Park are very scarce and include mainly traces of mansions, farms, sawmills, charcoal burners, mills and narrow-gauge railway infrastructure, as well as sites of the former Orthodox churches, cemeteries and a few roadside crosses. The scale of destruction after the Second World War shows the following inventory



A fragment of the railway track in Moczarne (B.Ć.)

of objects in the Bieszczady National Park and buffer zone:

- of the 51 orthodox churches existing in 1939, only 5 remained, including the only Boyko church located in Smolnik,
- of 3 synagogues – none survived,
- from 44 manors with folwarks - none survived,
- out of 73 water mills - none survived,
- out of 26 water and 25 steam saw-mills - none survived,
- out of 20 folwarks – none survived,
- from over 1342 homes – none survived,
- out of 54 cemeteries 20 survived, traces of other 12 can be found and 22 are nonexistent,
- a dozen roadside crosses and chapels have been preserved.



Tombstone at the cemetery in Berehy Górne (B.Ć.)

Within the Bieszczady National Park, the losses were the largest.

■ **Beniowa – old cemetery**

Former cemetery located next to the church with a dozen tombstones and foundations of a non-existent orthodox church from 1909. Worth special attention is a sandstone boat-shaped object with a carved fishmark. It is probably the stone base of the baptismal font.

■ **Berehy Górne – place after former court buildings**

In a place called Rostoki, where three streams joint together, foundations of a brick mansion are visible (the building was burnt down in the 19th century) also traces of several farm buildings and basements, along with old trees are located.

■ **Berehy Górne – old cemetery**

Old cemetery located next to the former church with several tombstones. Several of them were made by the amateur stone workshop of the Buchwak family.

■ **Caryńskie – ruins of a chapel and the old cemetery**

Old cemetery located next to the former church with several tombstones and the ruin of the chapel from the 19th century dedicated to St. John. It was made of stone and came from the second half of the 20th century, the parish was granted by Pope Leo XIII the right to grant indulgences on St. John the Baptist day. At the entrance to the cemetery, a roadside cross from 1911 made by a stonemason from Sambor.



The stone base of the baptismal font in the site of the former church in Beniowa (G.H.)



Jewish cemetery in Lutowiska (G.H.)

■ **Sianki – foundations of court buildings**

The court buildings were destroyed in 1946. The foundations of the manor with the basement and two wells and the foundations of the garden with the pond have survived.

■ **Sianki – ruins of the chapel „Grobowiec Hrabiny”**

Ruins of the burial chapel from the second half of the 19th century with the tombstones of Klara and Franciszek Stroinski, then owners of Sianki. In the near trees, visible traces of a wooden burnt church from 1831.

San Valley Landscape Park

■ **Dwernik – traces of old buildings, a wooden church**

A wooden church built of material from the church in Lutowiska, some of the furnishings also comes from a non-existent orthodox church in Lutowiska. A dozen or so tombstones have been preserved on the former cemetery. In addition, old trees were preserved in the place of manor and ruins of the mill on the Dwernik stream.

■ **Chmiel – wooden church with a cemetery**

Wooden Greek Catholic church from 1906 of St. Nicholas the Bishop, now a Roman Catholic church. Near the church, a dozen of pre-war tombstones and the oldest tombstone in the Bieszczady Mountains from 1641 belonging to Feronia from Dubrawskich Orlicka.

■ **Lutowiska – brick church**

Brick church in the neo-Gothic style from 1920 of St. Stanislaus the Bishop, built by the initiative of priest Michał Huciński. After the Second World War restored in 1963.

■ **Lutowiska – Jewish cemetery**

After Lesko it is the second largest Jewish cemetery in the Bieszczady Mountains, where more than 500 stone gravestones (macew) survived from the end of the 18th century until around 1940.

■ **Lutowiska – old buildings**

Lutowiska lost its municipal rights in 1919. Among the old buildings of the pre-war town of Lutowiska there are: a wooden villa with a corner tower, ruins of a brick synagogue, and in Posada Dolna - a few old, wooden Boyko huts.

■ **Smolnik – wooden church with a cemetery**

Wooden Orthodox church of St. Michael the Archangel from 1791 in the Boykoy type, currently a Roman Catholic church dedicated to Assumption of the Blessed Virgin Mary. Inside, a fragment of polychromy from the end of the 18th century. In 2013, inscribed on the UNESCO World Heritage List. A former cemetery with several tombstones is situated next to the church.

■ *Krywe – ruins of a stone church*

Ruins of a stone church of St. Paraskeva from 1842. A former cemetery with several tombstones is situated next to the church.

■ *Hulskie – ruins of a stone church*

Ruins of a stone church of St. Paraskeva from 1820. At the church ruins of a belfry.

■ *Tworylne – traces of old buildings*

Preserved foundation of the wooden church from 1876 and the ruins of the belfry. Next to them - the ruins of the court chapel, built in 1893 by the owner of the estate Wincenty Łęcki. In addition, the foundations of court buildings and an alley planted with elms, lindens and ash trees.

Ciśniańsko-Wetliński Landscape Park

■ *Balnica – stone chapel*

Stone chapel of Holly Ghost from the middle of the 19th century, next to the miraculous spring. Rebuilt in 2001 from the ruins, now inside the painting of Our Lady the Forest Keeper can be seen, painted by Zdzisław Pękalski, a well-known Bieszczady artist from Hoczew.

■ *Cisna – brick church*

Neo-Gothic parish church of St. Stanislaus the Bishop from 1914.

■ *Łopienka – stone church*

Stone church from the first half of 19th century, rebuilt in the 90s of the XX century. Before the Second World War, in the church there was the icon of the Mother of God, famous for graces (now in the church in Polańczyk – the sanctuary of the Holly Mother of Beautiful Love)

■ *Maniów – stone chapel*

A stone chapel from around 1914. Currently, it has been renovated.

■ *Rabe – brick chapel with a miraculous spring*

A brick chapel covered with sheet metal from around 1920, next to the spring in the forest (Synarewo). Located in the site of an older, wooden chapel from the nineteenth century to commemorate the appearance of the Mother of God to one of Rabe residents.



Tombstone from 1641 in Chmiel (G.H.)



Church in Łopienka (G.H.)



The interior of the church in Smolnik upon Ostawa (G.H.)

■ **Roztoki Dolne – wooden church**

Wooden Orthodox church of St. Michael from 1830, currently a Roman Catholic church. The present look is the result of renovation in 1983 (a porch and two towers were added).

■ **Smolnik – stone church and old village buildings**

Stone church of St. Nicholas the Bishop from 1806, now a Roman Catholic church. Inside, the iconostasis from the early nineteenth century in the Baroque style and side altars with icons from the eighteenth and nineteenth century. In the village old buildings from the beginning of the twentieth century were preserved - set according to ridge roofs, timber huts painted in brown colour with whitewashed stripes between the bales.

■ **Turzańsk – wooden church**

Wooden Orthodox church of St. Michael the Archangel from 1803, currently an Orthodox church. Built in the style of north-eastern Lemko orthodox churches. Walls decorated with figural-ornamental polychromy from 1898. Inside, preserved antique furnishings (including iconostasis from the first half of the nineteenth century, side altars). In 2013, inscribed on the UNESCO World Heritage List. A wooden belfry is the highest in the Polish Carpathians.

■ **Bieszczady Forest Railway**

Based on the infrastructure of a non-existent narrow-gauge railway for transporting timber, a tourist train operates today. It transports tourists through the mountain valleys from Majdan near Cisna to Przystup and to the west along the Slovak border up to Balnica.

War cemeteries in the area of IBR „EC”

The Polish-Slovak-Ukrainian borderland in the Carpathians was, in the 20th century, the arena of war struggles during several conflicts. The most important of these are, first of all, the Great War in 1914-1918, the Polish-Ukrainian War (1918-1919), the Hungarian-Slovak War (so-called Little War) in 1939, the Second World War (1939-1945) and the Polish Army's fights with Ukrainian Insurgent Army (UPA) in years 1944-1947. The strategic location of the area in the main chain of the Carpathians, between Łupkowska Pass (640 m a.s.l.) and Użocka Pass (853 m a.s.l.), attracted the attention of the strategists of those times. The Carpathian mountain passes have for centuries been the

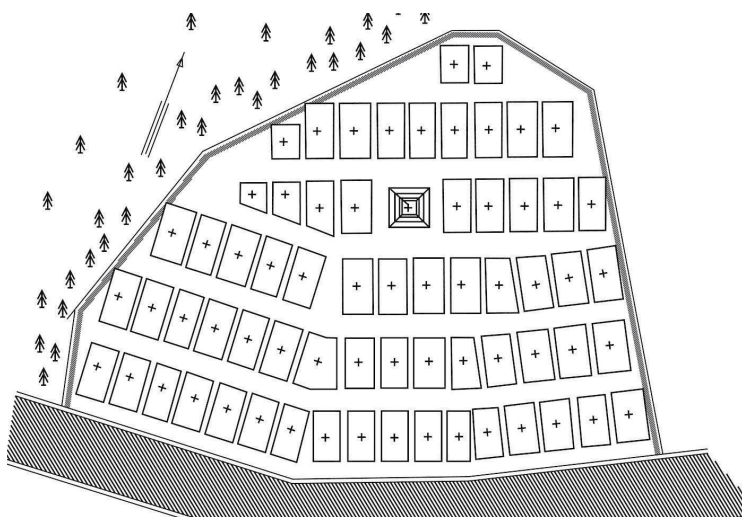
road connecting the territory of the Kingdom of Poland and Carpathian Ruthenia with the Kingdom of Hungary and Southern Europe. Of particular importance were the passes, through which railway lines and transit routes of great commercial and strategic importance passed. These places included passes at Radoszyce (684 m a.s.l.), Łupkowska Pass (640 m a.s.l.) with a railway tunnel operated since 30th of May 1987, 416 m long, with Transcarpathian railway line, Beskid Wołosacki (1104 m a.s.l.), Użocka Pass (853 m a.s.l.) with the railway line Użgorod-Lwów. The passes became for this reason the target of long-lasting fights, as a result of which the front line either stagnated along the mountain ranges, or moved once to the north, then to the south again. Remains of these events are cemeteries, trenches, fortresses, remains of weapons.



A fragment of the war cemetery in Bukowiec (G.H.)

■ War cemeteries in the Polish part of „EC” IBR

Cemeteries from the First World War were among others in Bukowiec, Komańcza, Stary Łupków, Cisna, on the slopes of Chryszczata, Maguryczny, Patrycja, Łopiennik, in Szczawno, Sianki, Tworyłne. Their look is known only from photographs, and places of location - from historical maps and preserved traces in the landscape, most often in the form of tree stands and earth graves arranged at regular pattern. In Cisna, there was a war cemetery with an area of about 8 ares. Today, it does not exist, but the handwritten plan from 1954 has survived. Apart from war cemeteries created at the place of the battles, the fallen soldiers were buried in separate burial plots within



Plan of a non-existent cemetery in Cisna (G.H.)



War cemetery in the former village of Ruské (G.H.)

existing burial grounds, including north of the church in Turzańsk. It is a place where soldiers killed during fights in Turzańsk and the area, in the winter of 1914/1915, were buried. In archival photos from Wołosate, Ustrzyki Górne, freshly built earth graves with embedded wooden crosses are visible. Due to the strategic location of the Wielki Dział and Chryszczata, this place was the arena of many fights during various conflicts. To this day, the remains of shooting trenches, bunkers and ground Austrian fortifications from 1914, Polish from 1920 and from Second World War are visible in the landscape. In the years 1945-1947, the massif and hills of Chryszczata were a refuge and a base for the UPA branches. Today, these places require detailed research and protection, because historical traces over time will be more difficult to find.

■ *War cemeteries in the Slovak part of IBR „EC”*

The biggest battles on the southern side of the Carpathians took place at the beginning of the First World War - in November 1914, and then at the beginning of January 1915, when the front line moved from Halicz (on the Polish side) to areas north of Stakčín, where it stayed until the end of May. In the villages located within Poloniny National Park, there are altogether about 14 war cemeteries and burial sites. Nearly 2040 soldiers of various nationalities (including Hungarians, Austrians, Czechoslovaks, Romanians, Russians, Germans and Poles) were buried there. In recent years, former war cemeteries have been renewed and made available to tourists.

Dara – the cemetery is located in a former village, above the brick church, as part of the current cemetery. A total of 30 unknown soldiers who died during fights in the surrounding forests are buried in the cemetery of 360 m². At the cemetery, wooden crosses and an information board have been placed in recent years.

Prislop – cemetery located at the Greek Catholic church and founded in 1917. Austrian-Hungarian soldiers who died in the Russian offensive in November 1914 are buried in the cemetery. The cemetery is currently in good condition and fenced.

Ruský Potok – cemetery is located by the road from Ruski Potok to Prislop. On the area of 588 m², 37 soldiers, probably from an Austrian-Hungarian army, are buried. Currently, the cemetery is overgrown with shrubs, and tombstones are less and less identifiable and require maintenance.

Topoľa – cemetery established in 1917, next to the wooden church of St. Michael. A total of 240 soldiers were buried in individual and collective graves. The inventory of the cemetery was carried out in 1922 and the names of the buried people were preserved. 26 names of soldiers from this list are of Czech origin. This allows us to expect that Russian soldiers could also be buried here. In 1996, the cemetery was renovated, the graves are well identifiable and the area is systematically mowed.

Čiščovaty (near Runina) – a cemetery with an area of 961 m² includes 67 single and collective graves. In total, 90 unknown, mostly Russian, soldiers were buried here. Currently, the cemetery is being renovated.

Ulič – a war cemetery from 1917 with an area of 663 m², is located west of the Greek Catholic church. The cemetery plan from 1921 has survived. 71 soldiers are buried there - 62 belonged to the Austrian-Hungarian army and 9 to the Russian army. Among the soldiers buried here is the grave of prince Aleksander Aleksejowicz of the tsar Romanow family, the chief general who died during an inspection in the Majkova meadow near the village of Zboj. The Russian general Mikolaj Mikolajewicz Mirbach is also buried in the cemetery.

Zboj – a war cemetery from 1917 is located in the northern part of the current cemetery. There are 203 soldiers buried there, 197 of which were of Russian origin. The cemetery is well-kept.

Nowa Sedlica – there are traces of the former cemetery of Soviet soldiers whose bodies were exhumed in 1946 and moved to the war cemetery in Michalovce.



Information board at the war cemetery in Smolnik (G.H.)



Smolnik – a renovated war cemetery (G. H.)



Velka Polana – a renovated war cemetery (G.H.)

Ostrožnica – cemetery from 1917 with an area of 172 m². 84 soldiers are buried here, 36 are soldiers of the Austrian-Hungarian army and 8 are Russians.

Ruské – there were two war cemeteries - one near the church, where 14 unknown soldiers were buried, and the other with an area of 395 m², on which almost 100 unknown soldiers are buried.

Smolník – a war cemetery is located in the place of the today cemetery and there are 124 unknown soldiers buried there.

Stakčín – over 959 soldiers from the First World War are buried in the war cemetery on Pánská Hora. It is the largest cemetery in the region. 117 soldiers from the First World War were transferred to the cemetery from the displaced village of Starina in connection with the construction of the Starina water reservoir.

Starina – the cemetery do not exist since the displacement associated with the construction of the Starina water reservoir. The bodies of approx. 116 soldiers were transferred to the cemetery in Stakcin.

Velka Polana – two war cemeteries. One of them is located near the ruins of the old Greek Catholic church, where a total of 340 soldiers are buried. The restoration works of the cemetery were undertaken according to the



*Velka Polana
– Rotunda in the war cemetery (G.H.)*

style of the main architect of war graves, the outstanding Slovak architect Dušan Jurkovič. Attention is drawn to the stone rotunda, which was erected from material originating from the ruined nearby church.

The second, so-called „Rusky cintorin“, located on the Hodošik hill in the Kučalata massif (851 m a.s.l.). It is the highest location of war cemetery from the First World War in Slovakia. A total of 220 soldiers, mostly Russian, are buried in the area of 210 m².

Zvala – on the area of 394 m², a total of 288 Russian soldiers were buried. After the displacement of the villagers and the liquidation of the village, the cemetery has been left alone and is poorly preserved.

■ War cemeteries in the Ukrainian part

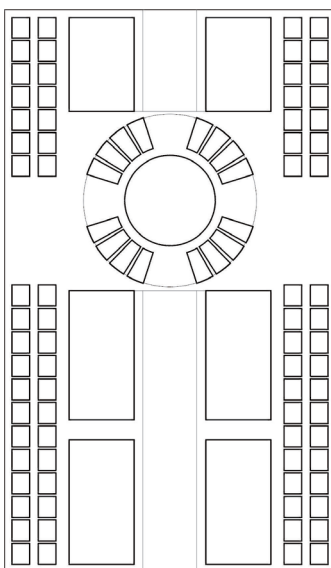
In the area of Uzhanskyi National Park, intensive fights took place during First and Second World War. After these events, abandoned and forgotten war cemeteries and remains of the Arpad defence system, built by the Hungarians in 1939-1944 along the Carpathian ridge remained. In recent years, thanks to the involvement of the Ukrainian-Russian-Slovak volunteer team, several of them have been identified and restored.

Wotosianka – First World War cemetery, dating from 1916 or 1917, on which 687 soldiers were buried.

Peak of **Czeremcha** (1130 m a.s.l.) – a war cemetery with an area of approx. 10 ha, on which more than 650 soldiers of the Russian and Austrian-Hungarian armies were buried. Mount Czeremcha, located in the area of the Użocka Pass, was an important strategic site. In the years 1914-1917, a battle took place here between the Russian and Austrian-Hungarian armies.

Użok – a war graves from the First World War, located near a wooden church. Six officers of the Russian army were buried here, six officers of the Austro-Hungarian army and 351 soldiers of both fighting sides. The remaining burial plots and war graves were recorded in the villages of **Użok** – 3 graves in the Jewish cemetery, **Zabrodź** – 153 graves (in the burial cemetery) and **Domaszyn** – 1 grave (burial cemetery).

In the Nadsyansky Landscape Park, there are traces of the war cemetery in **Sianki** (a dozen or so earth graves next to the church) and the burial plots in **Jabtonka Niżna**, which are part of the burial cemetery.



*Wielkij Bereznyj - plan of the war cemetery
(Ryc. L. Kostulski)*



The Łubnia-Czeremcha cemetery (M.B.)

Rules for visiting



Tourists in the Poloniny NP (M.B.)

Rules for visiting the Poloniny National Park

- The nature and landscape of the National Park is a natural heritage and should be protected.
- To make communing with nature more pleasant, it is worth using designated hiking trails and educational paths as well as marked cycling routes. Information points are available for tourists.
- For active recreation and sports in the National Park, you can use the designated downhill and cross-country skiing trails.
- Camping, lighting a campfire or spending the night in the National Park can only take place in designated sites.
- Touch the nature with your heart. In the National Park, picking plants, collecting their fruits, destroying trees, catching and killing animals, as well as destroying the landscape, is strictly prohibited.
- To protect wild animals in their natural habitat, dogs can only be walked on a leash and muzzled.
- Silence and peace in the National Park have a positive effect on health and improve well-being, it is prohibited to use light and sound effects outside closed rooms.
- Keep the National Park clean, dispose of the rubbish in marked areas. In the Park, especially during the drought, do not smoke. Smoking can cause a fire.

Rules for visiting the Bieszczady National Park for educational and touristic purposes (full version of the Rules with attachments is available on the BdPN website: www.bdpn.pl)

1. In the area of the Bieszczady National Park, there is a network of marked hiking trails, natural and historical-nature paths and walking paths that are open to the public. Due to the safety of visitors and nature protection, walking along the trails in the area of the National Park is allowed only from dawn till dusk. Admission to tourist trails and to the area of nature paths, between April 28 and November 13, is payable and tickets can be purchased in information and cash points. The amount of fees is specified in the price

- list. The ticket is valid for the whole day.
2. It is forbidden to take dogs to tourist trails and nature trails, with the exception of sections running along public roads. People with disabilities have the right to move along the trails and paths with a specially marked assistance dog.
 3. Horseback tourism is permitted on specially marked trails for horse riding. The following rules apply to horse riding in the park:

- Horse-riding routes in the Bieszczady National Park are mainly intended for using horses owned by the park;
- in a strictly limited way park director may allow for horse trails to be used by horse riders from studs located within BNP buffer zone. The amount of horse riding fees is specified in price list.

4. Routes for horse-drawn carriages, owned by the Park have been marked in the area. A fee is charged for carriage rides. The amount of fees is specified in the price list which is a separate attachment. There are following routes: Tarnawa Niżna – Dźwiniacz; Tarnawa Niżna – Bukowiec (public road); Bukowiec parking lot – Dol. Niedźwiedź stream (to the raincoat); Bukowiec parking lot – Beniowa – Bukowiec parking lot; Wołosate – a section of the road (partly public) towards the Bukowska Pass (4 km); Wołosate - Ustrzyki Górne (along the public road); Wołosate – a route through meadow and pasture in section 180 (2 km).

5. Cycling in the park is allowed on public roads and (after purchasing the admission fee on the trail) on properly marked routes in the valley of the upper San.



Markings on the Połonina Wetlińska trail (B.Ć.)



A ride in a carriage in the Wołosatka valley (T.D.)



Winter ski touring (T.D.)

6. Skiing is allowed on marked sections of hiking trails and on: walking routes around Wetlina; walking routes in Wołosate (after their launch); walking routes in the Tarnawa protection area (after their launch).
7. Camping is allowed in the following designated places: Campsite in Berezki; Camping Górna Wetlinka. For the use of the campsite, fees are charged, the amount of which is determined in the price list.
8. In the period from April 28 to November 13, following car parks are in use: in Ustrzyki Górne, in Wołosate, Wyżniańska Pass, in Brzegi Górne, in Bukowiec, in the Terebowiec Valley, in Rzczyca Valley, in Berezki near the campsite, in the tourist complex Górna Wetlinka, near the raised peatbog in Tarnawa Wyżna. There is a parking fee, the amount of which is specified in separate attachments. In the period from November 13 to December 31, Bieszczady National Park supervises traffic and collects charges on parking lots in Ustrzyki Górne (entry into the Potonina Caryńska), in Wołosate, on the Wyżniańska Pass and in Brzegi Górne.



Parking lot at the Wyżna Pass (B.Ć.)

9. Campfires are only allowed in places designated and adequately prepared by the BNP:

- At the Hucul Horse Conservation Stud in Wołosate,
- In Tarnawa Niżna – the base „Nad Roztokami”,
- At hotel „Biały” in Ustrzyki Górne
- At Górna Wetlinka camping site,
- Fire site with shelter at the Environmental Education Station in Suche Rzeki,

- Fire site with shelter in Ustrzyki Górne (entrance to Połonina Caryńska),
- Fire site with shelter at the campsite in Bereźki,
- Fire site with shelter in Terebowiec valley (Ustrzyki Górne),
- Fire site with shelter near Horse Station in Tarnawa Niżna,
- Fire site with shelter in Wołosate,
- Fire site with shelter in Brzegi Górne.



Fire site with shelter (T.D.)

Regulations for the use of fire sites and the amount of fees are determined in the price list.

10. Organizing tourist events, including rallies, in the area of the park, is allowed only with the consent of the park director and on the terms agreed prior to the organization of the event.

11. Organizing authority must ensure the participation of a mountain guide with the required license to the Eastern Beskids or a Beskid mountain guide (according to the Ordinance of the Minister of Sport and Tourism of 26 June 2014, regarding the acquisition of the mountain guide's rights from 2014, item 868), to guide groups of tourists over 10 people. The maximum number of people in the group is 50.

12. Beskid mountain guide holding the required certification for the area of the Eastern Beskids and holding a valid BNP license, entering the park area, does not pay fees for providing access to the area of nature trails.

13. The Park's director shall appoint among the employees a person to guide groups in the Park area for educational and tourist purposes.



Guided tour in the BNP (E.B.)



Educational classes in BNP (G.H.)

14. Mountain rescuers and mountain rescuers with rescue dogs are entitled to free access to trails and area of nature trails in the Park on the basis of a valid official ID.

15. Organizing authority is responsible for the safety of the participants and following the regulations of the Park during events.

16. Taking pictures and films for commercial purposes requires the consent of the park director and paying the fee. The amount of fees is specified in the price list.

17. Due to the safety of the tourists, in the winter season, it is recommended to report the planned route at the GOPR rescue stations.

18. In the period from January 1 to April 27 and from November 14 to December 31, no admission fees for trails and access to nature trails are charged.

19. The employees of the Park Service and Park Guard officers are entitled to control persons in terms of following the regulations in force in the Park, including the control of admission fees and to impose fines.

20. In the area of the Bieszczady National Park it is prohibited to:

- loud noise;
- capturing or killing wild animals, collecting or destroying eggs, juveniles and animal developmental forms, disturbing vertebrate animals,
- collecting antlers, destroying burrows, nests, lairs and other animal shelters and their breeding places;
- catching fish and other aquatic organisms;
- destroying or deliberately damaging plants and fungi as well as harvesting wild plants and fungi or their parts;
- use, destruction, deliberate damage, pollution and alteration of natural objects, areas and resources, creations and elements of nature;
- performing earthworks permanently changing the ground relief;
- acquiring rocks, including peat, and fossils, including fossil remains of plants, animals and minerals;
- destruction of historical heritage objects;

- walking, biking, skiing and horse riding, with the exception of public roads and trails, paths and routes designated by the director of the national park;
- walking on horseback riding trails, cycling on hiking and horse-riding trails and nature trails, except for their sections running along public roads;
- traffic of vehicles outside public roads and internal roads of the Park leading to housing estates and campsites;
- practicing water and motor sports, sailing on rivers and streams within the National Park;
- disturbing of park ecosystems through flights on motor-giders, hang-giders, paragliders and using other flying devices, such as drones or kites;
- camping, except for places designated by the director of the National Park;
- organization of recreational and sports events without the consent of the National Park director;
- Making fires and smoking tobacco products and use of open flame light sources, except for places designated by the director of the National Park;
- littering the area, leaving food leftovers and packaging, contaminating the air and soil – rubbish should be taken to containers placed at information and cash points or other touristic facilities;
- conducting commercial activities without the consent of the director of the Park;
- placement of boards, inscriptions, advertisements and other signs.



Campsite (T.D.)



Resting site on the trail (B.Č.)



BNP information and cash point (B.Ć.)

21. The park area is not available for the following actions:

- amateur fishing;
- flights on hang-gliders, paragliders and moto-gliders;
- flights of kites, ski gliding, snow kiting, and flights of drones;
- operating air flights, helicopter flights and other airborne vessels for tourism purposes;
- using kayaks, pontoons and other floating equipment on the Park's waters.



Visiting Poloniny NP (P.G.)

Rules for visiting the Bieszczady National Park in the winter

1. There is a network of marked hiking trails for visitors in winter, which can also be used as trails for using skis equipped with climbing skins. Alpine touring skis or cross-country skis are the most suitable for winter travelling in the Park. In the BNP, there are no downhill and cross-country skiing trails (organised ski trails).
2. Due to the installations protecting the natural environment of footpaths (wooden and tape barriers) and wooden ground-fixing bars,

be careful when moving along the trails. It is strictly forbidden to ski downhill from the ridges of the mountain down the slopes. Such behaviour can cause serious injuries. It is required to unbuckle the skis on steep slopes. BNP is not responsible for the consequences of accidents related to improper use of trails.

3. You should prepare yourself for field trip. Particular attention should be paid to footwear, as in many places on the trails there may be icing requiring the use crampons.
4. Visiting the Park at night (from dusk till dawn) is not allowed.
5. Due to the safety of the tourists, in the winter season, it is recommended to report the planned route at the GOPR rescue station in Ustrzyki Górne.
6. It is forbidden to leave any form of food for animals within the park, as this practice contributes to their synanthropisation.
7. In the winter, car parks in Ustrzyki Górne (entry to the Połonina Caryńska), in Wołosate, on Wyżniańska Pass and in Brzegi Górne are cleared of snow and supervised by the Park. Fees are charged for using them.
8. BNP provides toilets at Wyzna Pass, Bukowska Pass and sanitary facilities in Wołosate near the parking lot.
9. BNP reserves the right to close routes in the case of exceptionally unfavorable phenomena (snowstorms, icing of trails, avalanche risk, windbreaks, breaking of footbridges on watercourses, etc.).



Snowshoe touring (T.D.)



A winter walk on skis (T.D.)

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BIESZCZADY & IBR „EASTERN CARPATHIANS”



Step 1. Download the Bieszczady and IBR Eastern Carpathians app from Google Play or scan the QR code displayed next to it.

Step 2. Aim the smartphone with application and the AR mode enabled, on the icons of the church and manor below, to see their virtual 3D models.



Non-existent manor in Sianki



Non-existent church in Wolosate

