

REVIEW ARTICLE

Nature conservation areas in Galicia

V.M. Klapchuk, M.V. Klapchuk, R.P. Zahnybida, O.V. Pozdniakov

Department of Natural Sciences, Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine

E-mail: volodymyr.klapchuk@ukr.net

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The first environmental document in the Austrian Empire was the "Statute on Forests". Since 1870, first attempts had been made to ensure protection of some endangered species of animals and plants, rare objects of animate and inanimate nature. At the beginning of the 20th century, conservation work was carried out by enthusiasts. In 1910, scientists joined environmental activities. The Copernicus Society of Naturalists proposed to establish forest conservation reserves in the Eastern Carpathians and steppe conservation reserves in Podillia. The society also began the inventory of natural sites. An important role in nature conservation activity was played by the Dzieduszycki Museum of Natural History that provided the first description of natural sites. In 1886, W. Dzieduszycki established a beech forest conservation reserve and called it "Pamiatka Peniatska".

In 1928, the League for Nature Protection was founded. The Congress of Polish, Czechoslovakian and Romanian Scientists adopted a resolution to create several conservation reserves along the Dniester valley. On March 10, 1934, the Sejm of the Commonwealth of Poland adopted the Law "On the Protection of Nature".

In 1935, 4 forest conservation reserves were created. In 1936, a conservation reserve was created in the estate of Gołuchowski in Yaniv. 2 natural protected areas were established on the border of Podillia and Volhynia.

On October 29, 1921, the Chornohora Conservation Reserve with an area of 447.5 hectares was established thanks to the efforts of professor W. Szafer and doctor Wilczyński.

On September 27, 1932, the Directorate of State Forests established the National Park in Chornohora. The area of the park was 1,520.51 hectares. The Congress of Czechoslovakian, Polish and Romanian Scientists adopted a resolution on creation of a border nature park called the "National Park of the Three States". In 1912-1914, spruce and beech-fir-spruce old-growth forests on the slopes of Pip Iwan Marmarośkij, as well as forest areas on the slopes of Hoverla were taken under protection.

In 1914, thickets of European yew in the village of Kniaźdwir in Kolomyia district were assigned to the protected territories. After the First World War, their area was 94.1 hectares. The 200-year-old pine forest, the slopes of the mountains of Gnitesa, Polanycia and Komanova, the polonynas between Głystovatyj and Preluky, the pine forest conservation reserve on the mountain Rotundul were also taken under protection.

Thanks to professor W. Szafer and the metropolitan of the Greek Catholic Church A. Sheptytsky, the nature reserve "Yaitse" was established in 1934. The first Ukrainian National Park of Nature was created on this territory. The lands of the Lviv metropolitanate of the Greek Catholic Church were the basis for creating the nature reserves "Sosnovyj" and "Bukovyj", designing the nature reserve "Yalytsevuj", as well as the hunting reserve "Perehinska Puszcza".

Keywords: Nature conservation work; national park; conservation reserve; nature reserve; natural site

Introduction

Literature review

Environmental activity in Galicia has its deep roots. As stated earlier, one of the first environmental documents in the Austrian Empire was the "Statute on Forests" which came into effect on January 1, 1853 (The Forest Act of December 3 1853, 1887). Materials on conservation of certain territories and objects were considered by representatives from Poland, Czechoslovakia and Romania at various congresses (Resolutions of the representatives, 1929). A significant part of actual environmental research is highlighted in scientific and popular scientific works of Austrian and Polish scientists and ecologists, historians and ethnographers (Javorsky, 2004; Gajewski, 1931; Kostyrko, 1933; Krzemieniewski, 1926; Kulczyński, Kozikowski & Wilczyński, 1926; A small forest encyclopedia, 1980; Mądalski, 1936; Motyka, 1937; Oraczewski, 1921; Pawłowski, 1937; Raciborski, 1910; Spausta, 1894; Spausta, 1893; Środoń, 1937; Szafer, 1913; Szafer, 1910; Szafer, 1935; Szafer, 1920; Szafer, 1914; Szafer, 1912; Szafer, 1936; Wierdak, 1930), as well as of Ukrainian ones (Boichuk et al., 1998; Stoyko et al., 1991; Carpathian Reserves, 1966; Carpathian Reserve, 1982; Klapchuk, 2009; Klapchuk & Klapchuk, 2007). The materials of the Central State Historical Archives in Lviv are also informative (Central administration, 1932).

Results

Political processes in Austria-Hungary at the end of the 19th century gave Galicia an opportunity to enjoy the constitutional rights of a certain degree of self-government. Therefore, at the beginning of the 20th century, Galicia could be more proactive than other regions of the country in terms of nature conservation. This was due to both valuable forests, wonderful landscapes, majestic waterfalls, rocks, etc., and considerable scientific potential that was based on active research work of the scientists of the Jagiellonian and Lviv Universities (Boichuk et al., 1998). However, environmental protection measures were often not implemented because of conservatism of Austrian authorities and the financial interests of entrepreneurs in exploiting forest resources.

Environmental activity in Galicia has its deep roots (Stoyko et al., 1991). One of the first environmental documents in the Austrian Empire was the "Statute on Forests" which came into effect on January 1, 1853.

Since the 1870s, the Hungarian Carpathian Society had given much attention to the issue of protecting rare species of fauna (Carpathian Reserves, 1966). Along with this, first attempts had been made to ensure protection of some endangered species of animals and plants, rare objects of animate and inanimate nature. The creator of the idea of nature conservation was A. Novicky, professor of the Jagiellonian University, who proposed a draft of the following Statute.

Thus, Kraków and Lviv became the centers of environmental activity. In Kraków, this work was carried out by the Physiographic Commission and the Tatra Society. The centers of environmental activity in Lviv were the Copernicus Society of Naturalists and the Dzieduszycki Museum of Natural History. The creator of the idea of nature conservation in Galicia was a well-known zoologist Maximilian Novicky, professor of the Jagiellonian University. He was a teacher for prominent scientists Marian Raciborski, Marian Łomnicki, Vladislav Kulchinsky, Boleslav Kotul, Yevgenius Janot and many others who made a significant contribution to nature protection (Carpathian Reserve, 1982).

At the beginning of the 20th century, environmental activity became more organized. Thus, the rescript of November 30, 1903 made by the Ministry of Education in Vienna, addressed the issue of nature protection to government officials. In response to this, the Galician municipality in Lviv prepared a statement. In February 1904, the municipality appealed to institutions and private individuals to submit information about rare objects of nature. However, it had not produced any results. Therefore, in 1906-1914, conservation work was carried out by enthusiasts. They designed a plan for nature protection approved at the 10th Congress of Physicians and Naturalists of Galicia on July 22, 1907. Since 1910, the scientists had joined conservation activities. A good example was the speech of Yu. Brunicki in the Diet of the Kingdom of Galicia and Lodomeria. He proposed to create a number of local conservation reserves and nature parks (Klapchuk, 2009).

The members of the Copernicus Society of Naturalists reacted to this appeal. They proposed to establish mountain conservation reserves, in particular, forest reserves in the Eastern Carpathians and steppe reserves in Podillia, in the vicinity of Borshchiv. Unfortunately, all the efforts were in vain. However, thanks to the initiative of the Copernicus Society of Naturalists and professor M. Raciborski, the work on "inventory of natural sites" began. M. Raciborsky published an article containing a large amount of information concerning localization and description of endangered plant groups (Klapchuk & Klapchuk, 2007). In particular, he indicated the following sites that should be protected:

- the limestone cliffs of Medobory in the village of Vikno - the only place in Galicia containing the Pliocene relics - the slag of Podillia and the fescue of Bester;
- the fragrant ash area in the village of Rashtivtsi over the river Zbruch;
- the remnants of the Podillia steppes between Hovyliv, Derenivka and Khorostkiv, where they should be preserved from plowing and grazing in the Valigura area;
- the natural landmark "Ploska" in Lesser Liubyn near Lviv, where relics of the Ice age, such as *salix myrsinites*, *oxycoccus microcarpus*, and others were found in the lakes overgrown with peat.

M. Raciborski offered to protect old-growth forests remained in the lower forest range of the Eastern Carpathians. According to W. Spausta, M. Łomnicki, and W. Szafer, the greatest attention should be paid to the village of Kniaźdwir (Javorsky, 2004). It was the only place in Europe with natural thickets of European yew.

Foresters were also involved in environmental activity, taking an active part in the work of the "Halych Forest Society". The members of the Natural Club at the Higher Forestry School in Lviv collected interesting information about primary forest groups. The magazine "Silvan" published articles and notes on natural sites. Activities of naturalists and foresters contributed to the decision on establishing large conservation reserves in state forests. The First World War undermined implementation of these plans.

The Dzieduszycki Museum of Natural History played an important role in conservation activities, especially in protection of valuable archaeological finds in Starunia. The museum published the first description of natural sites in the surroundings of Lviv (Gajewski, 1931). In 1886, Wolodymyr Dzieduszycki, the founder of the museum, established a beech forest conservation reserve with an area of 20.02 hectares in the vicinity of Zolochiv in the natural landmark Peniaky. He named this conservation reserve "Pamiatka Peniatska" (Kostyrko, 1933).

Steppe and forest vegetation of Medobory had an exceptional geobotanical value. Private conservation reserves were created on Hostra Skalka and Liuboml. Mixed forests in the southern part of Medobory consisted of hornbeam, beech and other broad-leaved species. Along with virgin land flora, they represented remains of the Baltic flora forests and did not belong to the Podillia formation. However, by 1930, there had been negative changes in these forests. The old-growth forests disappeared (Krzemieniewski, 1926).

W. Szafer described Podillian beech from the Eastern Carpathians (Kosiv, the village of Slobidka Lisna) and the Western Podillia. W. Szafer also gave a description of the Podillian oak groves. In the 1930s these groves were rare and consisted of European oak along with a mixture of cherry, maple and ash. It was a unique type of grove in Western Europe (Kulczyński, Kozikowski & Wilczyński, 1926).

In 1928, the State Council for the Protection of Nature initiated the establishment of the League for Nature Protection. On December 13-14, 1929, the Congress of Polish, Czechoslovakian and Romanian Scientists adopted a resolution on protecting nature in the border areas of these states. It had also been decided to create several conservation reserves along the Dniester valley. W. Gajewski published a description of primary vegetation on this territory. W. Gajewski considered the Dniester Canyon near the steppe area of Pokuttia and Medobory the richest treasure of flora species. It was also necessary to protect forest groups, first of all oak groves. They belonged to natural sites of the Dniester Canyon. On March 10, 1934, the Sejm of the Commonwealth of Poland adopted the Law "On the Protection of Nature" which regulated legal and organizational issues concerning designation of protected areas.

In 1935, thanks to the support of the authorities and the Foundation of the J. Hohendorf Higher School of Agriculture in Shutromintsi (Podillia, Zalishchyky district), four forest conservation reserves were created: the floodplain forest on the Dniester Island, the shrubs of Podillia, the oak-hornbeam forest and the oak grove.

In 1936, Joseph Madalski, professor of the Jan Kazimierz University, described the valuable forest in the estate Koltiv near Zolochiv, which represented a mixture of centuries-old beeches and small-leaved linden. It was more significant than "Pamiatka Peniatska". This conservation reserve had an area of 35 hectares and belonged to Gołuchowski from Yaniv (Oraczewski, 1921).

J. Motyka also identified some valuable objects on the border of Podillya and Volhynia (Pawłowski, 1937), namely Trendovach near Zolochiv (a common beech forest) and Lysa Hora near Zolochiv (a mixture of forest and steppe flora). S. Krzemieniewski described relict meadow areas in Kryvchitsi near Lviv. There were small hills separating Podillya and Roztochia from Pobuzhzhia. Before the First World War, old oaks and beeches grew on the northern side of this territory. They bordered on shrubs and steppe fauna in the south (Raciborski, 1910).

Nature conservationists were also interested in the forest massifs of the Eastern Carpathians, namely of Chornohora (Spausta, 1894). In 1910, the Ministry of Agriculture and State Estates entrusted the Directorate of Forests in Lviv to discover natural objects that could be regarded as conservation reserves. Professors Stanislav Sokolovski and Wladyslav Szafer focused on it.

The Directorate of Forests contacted the interested companies. Thus, professor W. Szafer discovered a part of the forest in Vorokhta forestry. However, he did not make the final conclusion on establishing a conservation reserve on Chornohora. Conclusions made by Dr. Wilczyński for the journal the "Protection of Nature" became a significant contribution for establishing a conservation reserve. In 1914, it was proposed to create a conservation reserve in the sections 107 and 112 of the supreme forestry of Vorokhta. After that, two officials of the Department of Forests at the Ministry of Agriculture and State Estates in Poland visited Chornohora. On October 29, 1921, it was ordered to surround 447.5 hectares of forests and polonynas of Chornohora by a barbed wire fence.

On September 27, 1932, the Directorate of State Forests issued the letter No. 2580-U/32. It had been decided to create a national park on the territory of 649.89 hectares that belonged to the supreme forestry of Vorokhta. This area included the stream Prypir up to the polonynas along the ridges of Kozmeska, Hoverla, Breskul, Pozhyzhevsk, Dancezh, Shpytsi, Homul and Maryshevsk. In 1921, the same status was given to the polonynas in the south-west of Dancezh to the border with Czechoslovakia, as well as the areas near Dancezh, Turkul, Shpytsi and the boundaries of state forests near Homul and Greater Maryshevsk. The total area of these territories was 295.41 hectares. The rest of the territories near Dancezh and the whole of Pozhyzhevsk with an area of 575.21 hectares should be regarded as a partial conservation reserve. In 1921, a forest conservation reserve with an area of 140 hectares and a polonyna conservation reserve with an area of 307.5 hectares reserve were located on this territory. The total area of these conservation parks reached 447.5 hectares, while the area of the national park should be 1,520.51 hectares (Spausta, 1893).

It was planned to expand the borders of the National Park using the territory of the private polonyna Zarusliatska near the ridge of Hoverla with an area of about 500 hectares and the ridge of Kozmeska with an area of about 300 hectares. The issue on extension of the conservation reserve on Hoverla was discussed at the above-mentioned Congress of Czechoslovakian, Polish and Romanian Scientists. The Congress adopted a resolution on creation of the "National Park of the Three States" between Pip Iwan Marmaroškij and the ridge of Chyvchyna at the border of these states (Śródoń, 1937).

In 1912-1914, spruce and beech-fir-spruce old-grow forests on the slopes of Pip Iwan Marmaroškij (Szafer, 1913), as well as forest areas on the slopes of Hoverla near the stream of Bilyj with an area of 130.6 hectares (Szafer, 1910) were taken under protection.

Thickets of European yew in Galicia also attracted a significant environmental interest. European yew belongs to relict plants that have survived in the Ukrainian Carpathians since the Jurassic period of the Mesozoic Era, 180 million years ago. As pointed out by P. Kontnyj with the reference to archival sources, in the second half of the 18th century, peasants paid a part of their tribute with European yew timber. As a result, more than 100 thousand trees were destroyed. One thousand stumps with a diameter of 120 cm were found in the vicinity of Zhabia. As European yew belongs to the slowest growing softwood species, the stocks of its timber decreased rapidly. In fact, this species could grow 2 or 3 thousand years. At the edge of the 19th and 20th centuries, European yew grew not only in Kniaždwir. It could also be found in the following natural landmarks: "Hranitnyj Potik" near Kosiv, "Yasnovets" in the village of Zelene, "Rostoka" in the village of Pasichna, "Pravych" and "Staryj Mizunj" near the village of Vyhoda, "Rybnychyk" and "Khodorovets" in Turka district. In addition, there were some areas near the rivers Bystrytsia of Nadvirna, Bystrytsia of Solotvyn, Limnytsia and Mizunka where *Taxus baccata* grew (Szafer, 1935).

The most valuable European yew forests were near the village of Kniaždwir in Kolomyia district. It was W. Spausta who described these forests for the first time. He published the book "Yew" where he pointed out that these forests were 200 years old (Szafer, 1920). At the beginning of the 20th century, L. Lomnytsky and W. Szafer revealed that 20-30 trees of European yew grew near the village of Kniaždwir. It was the largest area in Europe where this species grew (Szafer, 1914). In 1914, this territory was declared a protected area. During the First World War, the forest was significantly destroyed. Only in 1923, 94.1 hectares of European yew thickets in the village of Kniaždwir were officially declared a nature reserve (Szafer, 1912).

A. Środoń also wrote about the need to protect the 200-year-old old-growth pine forest on the peatlands with an area of about 10 hectares in the natural landmark "Drimychyj Lis" near the village of Kryvets in the mountain chain Gorgany (Szafer, 1936). B. Pawłowski proposed to create a number of conservation reserves in Chyvchyny, among which the following were of particular note: the conservation reserves of Gnitesa, Polanycia and Komanova; the polonyna conservation reserve between Glystovatyj and Preluky; the pine forest conservation reserve on the peatlands on the mountain Rotundul (Resolutions of the representative, 1929).

Polish botanist and conservationist, professor W. Szafer, as well as metropolitan A. Sheptytsky played an important role in activities aimed to protect mountain forests of the Carpathians. Thanks to their efforts, the nature reserve "Yaitse" with an area of 270 hectares was established in 1934. Cedar pine forests were protected on this territory. On April 15, 1935, A. Sheptytsky issued a formal act on creating the conservation reserve "Yaitse". According to this document, the nature reserve was under protection of the Shevchenko Scientific Society in Lviv. At the same time, the "Prescriptions for Visitors of the Cedar Reserve" were approved, as well as the "General Description of the Metropolitan Andrey Sheptytsky Cedar Reserve in Gorgany" was created (The Forest Act, 1853).

In April 1935, a proposal to expand the territory of the conservation reserve "Yaitse" and establish on this place the first National Nature Park made by Andrey Sheptytsky was approved at the 5th Congress of Ukrainian Conservationists and Physicians. The Commission on the Conservation of Nature of the Shevchenko Scientific Society was authorized to create nature reserves in Gorgany.

On August 18, 1936, there was a conference on nature conservation in "Yasna Villa" in Pidlyute. The conference was organized by the Commission on the Protection of Nature of the Shevchenko Scientific Society and the Ukrainian Tourist and Local Lore Community "Plai". The conference decided to make a film about the treasures of nature in Perehinsko, as well as to publish a monograph on the nature reserves of "Perehinska Puszcza" and establish the Museum of the Gorgan Highlands in the village of Osmoloda. It was recommended to create a sycamore-elm nature reserve in the natural landmark "Shumliachy" and a rock reserve in the natural landmark "Sokil", and take under protection the mountain peatlands. It was also decided to perform cartographic works in these nature reserves. Some other issues on the protection of nature were also discussed at the conference, in particular, the need to create a nature reserve on the mountain Kasova near the village of Bovshiv in the vicinity of Halych, where unique relic steppe vegetation was preserved on rocky hills and gypsum cliffs.

The nature reserves "Sosnovyj" with an area of 25.57 hectares and "Bukovyj" with an area of 4.7 hectares were established on the lands of the Lviv metropolitanate of the Greek Catholic Church in the village of Perehinsk. A project was designed to create the nature reserve "Yalytsevyy" with an area of 30.4 hectares. 48-meter-high and 4-meter-thick fir-trees grew there. The age of these trees was between 200 and 500 years. It was also planned to create the hunting reserve "Perehinska Puszcza" with an area of 300 hectares on the 1613-meter-high mountain Ovul. A lot of old-growth spruce forests could be found there (Wierdak, 1930). In general, a large number of protected areas and objects were created and planned to be established in Galicia during the interwar period (Table 1).

Table 1. Actual and Prospective Network of Protected Areas On the Piedmont Territories of Galicia.

Name of conservation reserve	Area, ha	Year of creation	Location	Description
Actual				
Bubnyshche	106.9	1907	Dolyna district, Stanyslaviv voivodeship	mixed forests, caves
Yasin	500	1932	village of Yasin, Dolyna district, Stanyslaviv voivodeship	cedar pine forests, mineral springs
Kniaždwir	94.1	1914	village of Kniaždwir, Kolomyia district, Stanyslaviv voivodeship	the only place in Europe where European yew grows
Stratyn	3.28	1931	Rohatyn district, Stanyslaviv voivodeship	Podillian beech forests
Pamiatka Peniatska	20	1886	Zolochiv district, Ternopil voivodeship	old-growth beech forests
Planned to be Established				

Torfovysko nad Ozerom	village of Yaniv, Lviv voivodeship	swamp vegetation
Diavolska Skelia	Lviv city	forest ecosystems
Klymets	Stanyslaviv voivodeship	forest ecosystems
Kobaky	Kosiv district, Stanyslaviv voivodeship	upper border of European oak areas
Ponikva	Ternopil voivodeship	forest ecosystems
Volysia	Ternopil voivodeship	forest ecosystems
Shutromintsi	Ternopil voivodeship	forest ecosystems
Shezhava	Ternopil voivodeship	steppe and forest ecosystems
Zhulitska Hora	Ternopil voivodeship	steppe and forest ecosystems
Sviata	Ternopil voivodeship	steppe and forest ecosystems
Storozhykha	Ternopil voivodeship	steppe and forest ecosystems

Conclusions

One of the first environmental documents in the Austrian Empire was the "Statute on Forests" which came into effect on January 1, 1853. Since the 1870s, first attempts had been made to ensure protection of some endangered species of animals and plants, rare objects of animate and inanimate nature. The creator of the idea of nature conservation was A. Novicky, professor of the Jagiellonian University. Environmental work in Kraków was carried out by the Physiographic Commission and the Tatra Society. The centers of environmental activity in Lviv were the Copernicus Society of Naturalists and the Dzieduszycki Museum of Natural History.

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Environmental research on Chornohora began before the First World War. On October 29, 1921, the Chornohora Conservation Reserve with an area of 447.5 hectares was established thanks to the efforts of professor W. Szafer and doctor Wilczyński.

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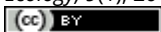
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