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*Andriy Shulgach, Graduate**e-mail: ashulgach@hotmail.com**Mykhaylo Melniychuk, PhD (Geography), Associate Professor**e-mail: mel.mm@mail.ru**Lesya Ukrainka Eastern European National University*

RECREATIONAL POTENTIAL EVALUATION OF THE PERSPECTIVE NATIONAL PARK «LISOVA PISNIA»

The recreational potential of Turia and Stokhid middle watershed geosystem is studied. Historical and cultural, recreational and wellness, ecological environmental components of that potential are identified as significant factors of the National Park organization herein. Creation of new national parks and their delineation must be scientifically justified and conform to the requirements of the laws of Ukraine. Also an important criterion is the presence of national historical heritage and humanistic resource potential. The article stresses the need to preserve landscapes which became known worldwide thanks to the Lesya Ukrainka's work. That landscapes with high recreational potential which forms totemic, sacred relation to the landscape as to the native land. Nechymne lake – the live scenery of the Lesya Ukrainka's immortal piece, a cradle of the "Lisova pisnia". Esthetic and recreational potential of Krychevytske, Mezhylyiske and Povorske lakes, biotic diverse of landscape complexes which survived in the middle flow of Turiya and Stokhid are paid attention in the article.

The article underlines the role of landscapes in the educational and ecological tourism development. In placing of components of the "Lisova pisnia" national park humanistic resource potential historical and cultural carcass was highlighted. The carcass formed by memorial items related to Lesya Ukrainka (Nechymne tract, Skulyn village, "Lisova pisnia" museum), architectural monuments (Dmytrivska church at the Gishin village – the oldest monument of wooden architecture at Volyn' region and temple facilities in Krychevychi, Cheremoshne and Skulyn villages), old-military and sacred elements (including monument to fighters for freedom of Ukraine around Skulyn village where the first UPA troops in Volyn were forming in 1942 etc.). Territorial distribution of carcass and others elements of humanistic potential displays the authors map. Stance on research area humanistic potential set out in article and coincides with recommendation of the European Convention of landscapes essence of which is in the need to enhance the role of landscape as witness of history, as the cradle of European cultural identity, common heritage and the diversity of Europe.

Key words: perspective national park, recreational value of the territory, landscape, aesthetic value.

Андрій Шульгач, Михайло Мельничук. ОЦІНКА РЕКРЕАЦІЙНОГО ПОТЕНЦІАЛУ ПЕРСПЕКТИВНОГО НАЦІОНАЛЬНОГО ПРИРОДНОГО ПАРКУ «ЛІСОВА ПІСНЯ»

Досліджено рекреаційний потенціал геосистеми середнього межиріччя Турії та Стоходу, що розглядається авторами як перспективний національний природний парк «Лісова пісня». Визначено придатність цієї геосистеми для здійснення різних видів рекреаційно-туристичної діяльності. Обґрунтовано оціночну шкалу та складники рекреаційної цінності території. Визначено рекреаційну місткість та рекреаційну цінність території перспективного національного природного парку «Лісова пісня».

Ключові слова: перспективний національний природний парк, рекреаційна цінність території, ландшафт, естетична цінність.

Андрей Шульгач, Михаил Мельничук. ОЦЕНКА РЕКРЕАЦИОННОГО ПОТЕНЦИАЛА ПЕРСПЕКТИВНОГО НАЦИОНАЛЬНОГО ПРИРОДНОГО ПАРКА «ЛЕСНАЯ ПЕСНЯ»

Изучен рекреационный потенциал геосистемы среднего междуречья Турии и Стохода, который рассматривается авторами как перспективный национальный природный парк «Лесная песня». Изучена пригодность этой геосистемы для осуществления разных видов рекреационно-туристической деятельности. Обоснованы оценочная шкала и составляющие рекреационной ценности территории. Определена рекреационная емкость и рекреационная ценность территории перспективного национального природного парка «Лесная песня».

Ключевые слова: перспективный национальный природный парк, рекреационная ценность территории, ландшафт, эстетическая ценность.

Introduction. Volynske Polissya Nature Reserve Fund Network needs to be improved, as well as new especially valuable areas need to be identified and taken under protection. These areas include low-disturbed geological system of Turia and Stokhid interfluvial areas which has not lost their self-restoring capacity and man's economic impact compensation effect. The author regards this area to be Perspective National Park (PNP) "Lisova Pisnia".

Literature overview. Characteristics and specifics of recreational nature management in National Parks have been studied by O. Dmytruk [3], V. Hetman [2], O. Mishchenko [5] and others. As taking into consideration our researches, V. Matsola's [4] method of numerical recreational evaluation is the most appropriate one.

To evaluate the recreational potential of the Perspective "Lisova Pisnia" National Park, it is necessary to identify its components, justify the scale of their evaluation; calculate the consolidated figures for comparison with the existing Nature Reserve Fund objects of the corresponding status. The research of the recreational suitability of the territory, assessment of recreational resources, analysis of the prospects for tourism development – are needed to organize the National Park.

Main contents of research. In the assessment of the recreational resources of the Perspective National Recreational Park "Lisova Pisnia" V. Matsola's [4] methods were used as the basic ones. These methods involve the study of natural, culture-historical and social and economic recreational resources. According to these methods, each criterion is evaluated on a three-point scale, where 1 point of low, 2 points of medium, 3 points

of high. Besides the abovementioned components of the recreational value of the territory, L. Cherchyk and O. Mishchenko [8] distinguish flora, fauna and hydrologic value.

Flora and fauna value is determined by the representativeness factor (the ratio of the number of species of plants or animals in the Perspective National Park to the number of species in the region) and uniqueness factor (the ratio of the number of species listed in the Red Book of Ukraine within the territory of the Perspective National Park to the number of species listed in the Red Book of Ukraine in the region). The flora and fauna representativeness indicators were evaluated on the follow-

ing point scale: 3 points – over 30%; 2 points – 10-30%; 1 point – up to 10%. During the evaluation of the flora and fauna uniqueness the following scale was used: 3 points – 20% and more, 2 points – 5-20% and 1 point – up to 5%. The rarity component of the Perspective National Park comprises 26 plant species and 29 animal species listed in the Red Book of Ukraine. Flood plains of Turia and Stokhid are of strategic importance for the preservation, migration and distribution of species biodiversity in the region. Flora and fauna value (ratio of the studied indicators to the number of points) of the studied territory amounts to three points (Table 1).

Table 1

Flora and fauna value of the Perspective National Park “Lisova Pisnia”

Criterion	Volyn region	“Lisova Pisnia” National Park	
		indicator	points
Number of plant species	1525	500	
Flora representativeness ratio, %	–	32,7	3
Number of plant species listed in the Red Book of Ukraine	72	26	
Flora uniqueness ratio, %		36,1	3
Number of vertebrate animals species	387	248	–
Fauna representativeness ratio, %	–	64, 1	3
Number of animal species listed in the Red Book of Ukraine	94	29	–
Fauna uniqueness ratio, %	–	30,9	3
Total score			12
Flora and fauna value			3
Total score			12
Flora and fauna value			3

Landscape and aesthetic value was assessed by the following indicators: vertical separation of relief, hydrologic value, forest cover percent, species and age composition of forests (Table 2). Vertical partitioning of the territory is caused by moraine ridge, dunes, river valleys, karst cavities. The forest cover percent of the Perspective National Park is 68% which corresponds to 3 points in our evaluation scale. For the recreational purposes, the forest capability to produce oxygen and phytoncides, absorb carbon dioxide is of greatest importance. The most typical plant species in the Perspective National Park “Lisova Pisnia” are: English oak and horn-beech which belong to the first group of phytoncides; common pine, hazel, birch, bird-cherry, raspberry belong to the second group of phytoncides.

The phytoncide qualities of plantings reduce the quantity of bacteria and microbes in the forest air, improve the hygiene and sanitary conditions of the rest. Areas of plantings with the 0.3-0.6 degree of closeness are the most picturesque ones and have the best conditions to rest. Such areas make up about 25% of the forest area in the Perspective National Park. Forests in the PNP are rich in mushrooms and berries, its gathering is regarded as an attractive and salutary recreation form. The most common mushroom species are: chanterelles, yellow knights, annulated boletus, honey fungus, russula,

bay bolete, edible boletus and rough boletus; the most common berries – blueberries, raspberries, blackberries, cranberries. The high aesthetic value of National Park’s forests was an inspiration source for Lesya Ukrainka, whose immortal works live scenery captures our contemporaries. In the “Lisova Pisnia” PNP there are a lot of attractive, in terms of landscape aesthetics, landscapes, multiple perspectives (near, medium, far), complex skyline, wealth of colors and shades (first of all, lakes, their coasts, Aeolian hills). This is the place where All-Ukrainian plein airs for painters were hosted (Zabilia stow). The aesthetic value of nature is considered to be an important criterion for its preservation, conservation, and "... aesthetic evaluation aimed at determining the aesthetic value of landscapes and developing of recommendations on creating or zoning of natural reserve fund objects." [1, p. 178].

The hydrologic value of the “Lisova Pisnia” PNP is determined by the following indicators: water area, the total length of drainage, the water state to perform recreational activity. The water resources of the area amount to 532 ha, including 178 ha of lakes and ponds, 296 ha of rivers and 58 ha of channels. The waters of the rivers Turia and Stokhid are used for a brief rest, boating (every summer “Stokhiderby” rowers’ competitions are held), swimming, fishing.

Out of nine existing here lakes only four can be used for recreational purposes. Krychevtske lake is the only one out of 220 lakes in the region chosen to hold national and international sport fishing competitions (meets standards for the length of the coastline, water volume, reproduction conditions, etc.). Eutrophication of the Slipe 1 and Slipe 2, Male and Nechymne lakes limits

or eliminates their use for recreational purposes. All lakes within the “Lisova Pisnya” PNP contain sapropel, including of organic and organic-silicate origin with a homogeneous structure, high content of trace substances and bioactive substances that have medical properties (diseases of joints, skin, rheumatism, burns).

Table 2

Landscape and aesthetic value of the “Lisova Pisnia” PNP

№	Criterion	Indicator value or performance	Point
1	Vertical separation of relief, <i>m</i>	1-2, sometimes 10-20	2
2	Hydrologic value:		
	- water resources or water cover, % of the total studied area;	0,2	1
	- the total network of drainage, <i>1m/km²</i> ;	1,3	2
	- water state to perform recreational activity	Possibility of organizing boating, water is suitable for swimming	2
3	Forest cover percent, %	68	3
4	Species composition of forests	pine, oak-pine forests	2
5	Age structure of forests	middle-aged plantings	2
6	Total score		2,0

The weather in early spring and late autumn is unfavorable for recreation activity and does not give chance for continuous outdoor recreation. The best climate conditions for all types of recreation and tourism are during the warm season that lasts for 150-155 days, and an average annual temperature values during the warm season (May to September) in the promising national park (PNP) is 16.2°C. This temperature regime determines favorable conditions for performance of different types of tourist and recreation activity during the warm season and is scored three points. What concerns cold season, the favorable period for arrangement of winter tourism and recreation lasts as usual for 50 days and is scored one point.

Within the PNP framework there is one landscape reserve of national value (Nechymne); five reserves of local value and three natural landmarks of local value with the total areas of 2,516.6 hectares that is 8.9% of the park area so the potential of nature protection territories and objects is scored three points.

In the “Lisova Pisnia” PNP there are some valuable historic and architectural monuments, mostly sacral, located. First of all, it is St. Dmytrii Church in the Hishyn village – the oldest monument of wooden architecture of Volyn (1567). There is an icon of the Virgin Mary and fragments of decorative painting of the 16th century in the church. Right by the western border of the PNP in the village of Dorotyshche there is the Assumption Church of 1767 with a partially preserved wall tempera painting of the 18th c. There are the noteworthy church buildings of the 19th c. in the villages of Krychevychi (the church was built in 1823), Cheremoshne (1842), Skulyn (1887). All of them have undergone renovations during the last decennary, have high sacral potential, and are valuable from the point of view of educational and

religious tourism. Among other objects of historical heritage there are stows of Zakrevshchyna, Baraky, Harenshchyna, Turova Mohyla. In the forests near Skulyn in the stow of Baraky there were the first Volyn UPA (Ukrainian Insurgents Army) units formed in 1942, and now there is a great monument to the fighters for the freedom of Ukraine. A short way off, there is a monument cross on the unmarked grave of the Soviet soldiers – liberators of Kovel. Therefore, in PNP there are two monuments of history and architecture included to the state register of intangible monuments of Ukraine of the local value and one of the national one; “Lisova Pisnia” museum in Nechymne stow is a branch of the country-house museum of Lesia Ukrainka in the village of Kolo-diazhne, multiple sacral elements, and consequently, their historical and cultural value is scored two points.

Transport coverage of the researched territory is low and makes it 0.005 km per 1 sq.km (in a way it is compensated by proximity of a big transport node – Kovel, and availability of transport connection with it), and thus it is scored one point. The infrastructure of the PNP tourist accommodation places is not developed. There are no sanatoria, vacation homes here, but there is Volodar recreation center in the Zabillia stow and fishing camps on the lakes of Velyke and Mezhylyske, three agricultural houses in the village of Skulyn and one in the village of Cheremoshne, and near the northern border of the Perspective National Park there is an agricultural house of Nesukhoizhi (village of Toikut), but their total capacity is maximum 200 people, and thus the infrastructure of the accommodation places is scored one point.

The recreational value of the “Lisova Pisnia” PNP territory is calculated according to the following formula:

$$O = O_{ae} + O_{c1} + O_{c2} + O_f + O_h + O_{hc} + O_b + O_a, \quad (1)$$

where: O is a complex recreation territory score in points;

O_{ae} is a territory's aesthetic values score;

O_f is a flora and fauna value score;

O_{c_1} is a score for climate values as to recreation events during the warm season;

O_{c_2} is a score for climate values during the cold season;

O_h is a score for hydrologic value;

O_{hc} is a score for historic and cultural value;

O_t is a score for the territory's transport accessibility;

O_a is a score for the tourist accommodation places infrastructure.

The recreation value ratio is calculated according to the formula:

$$K_p = O/O_{min}, \quad (2)$$

where: K_p is a recreation value ratio;

O_{min} is a minimum value of the complex score in points.

There are three points given to the flora and fauna value, potential of nature-protection territories and objects, climate value during the warm season, two – to the landscape and esthetic value, and historic and cultural value. The lowest score (one point) is stipulated by climatic peculiarities of the park during the cold season, weak transport accessibility of the territory, underdeveloped infrastructure of the tourist accommodation places. Therefore, $K_p = 16 / 8 = 2$. The recreation value ratio of the "Lisova Pisia" PNP is 2.0. To compare, in the functioning "Prypiat-Stokhid" national park it equals 1.8 [8].

Assessment of the "Lisova Pisia" PNP recreation potential along with recreation value requests for research of the recreation capacity. The latter was determined on the basis of the PNP functional zoning and allocation of the regulated recreation zone. This zone allows for certain recreation activity and performs the function of the reserve's nucleus isolation. Total area of the zone is 10879 hectares or 38.4% of the Perspective National Park territory. This is pretty enough for fulfillment of its functions even with increased visitors flow of the perspective park. In the "Lisova Pisia" PNP regulated recreation zone there prevail unstable (light coniferous pine) and low-stable (mixed oak-pine) forests

where the values of maximum recreation load make it consequently 3 and 4 people per hectare, near lakes and swamps in the small-leaved forests and forest-meadows this value is increased by 6-8 people per hectare. With account of the areas of these plots, the maximum recreation capacity of the "Lisova Pisia" PNP regulated recreation zone is 51830 people and this number is several-fold higher than its today's attendance in whatever season. Today's recreation here has a limited, mostly utilitarian character. In the stationary recreation zone there are the recreation infrastructures objects located or planned to be located. For the present day, the stationary recreation zone area is the smallest – 24.2 hectares, or 0.01% of the PNP area. Its elements are agricultural houses in the villages of Skulyn and Cheremoshne, Volodar recreation center in the Zabillia stow, the fishing camp on the Mezhyiske lakeshore. The capacities for extension of this zone (up to 6.45% of the PNP) are related to recreational resources of the Krychevtske and Povorske lakes, development of village tourism, healing properties of pinewoods, sport fishing.

Conclusions. Assessment of the PNP recreation potential requests its recreational evaluation. "Lisova Pisia" PNP recreation value was determined according to the following constituents: landscape and aesthetic value, flora and fauna value, hydrology value, climate indicators for recreation activity during the warm and the cold season, nature-protection territories and objects potential, historical and cultural value, presence of tourist accommodation places, transport accessibility. The "Lisova Pisia" PNP, subject to the suggested methodology, has an average territory recreation value score of two points. The performed functional zoning of the park presupposes differentiated regime of territories use. The maximum recreation capacity of the "Lisova Pisia" PNP regulated recreation zone is 51830 people. For development of tourism and recreation it is necessary to expand the network of tourist accommodation places. The Perspective National Park "Lisova Pisia" has favorable conditions for recreation activity, first of all, for development of educational, ecological, sport and health tourism.

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