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Optimization of the land use system of the Karmeliuk's Podillia National Nature Park

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SUMMARY

Functional zoning of the Karmeliuk's Podillia National Nature Park territory was carried out, taking into account representative and rare ecosystems. The need to change the regime of the territory of the "Stratiivska Dacha" tract in blocks 72, 74–75 from an economic zone to a zone of regulated recreation is substantiated. The need to include the "Vyshenka" tract, located within the boundaries of the Chechelnytsia village council, as a complete natural complex, represented by unique landscapes of various types of ecosystems, as a part of the park with the right of permanent use has been proven.

Keywords: land use, ecological network, Karmeliuk's Podillia NNP

Introduction

The Concept of the State target program for the development of land relations in Ukraine for the period up to 2020 (2009) refers to the land use rationalization, which will make it possible to achieve its sustainable development. If we analyze the definition of sustainable land use concept according to the Law of Ukraine "On Land Management" (2003), then the term " land use rationalization" implies a set of measures that ensure optimal parameters of ecological and socioeconomic functions of territories.

According to the scientific and legal foundations of land management, the term "land use" is used to denote the territory that is provided for use by a legal entity or a citizen for specific purposes and is characterized by a defined area, boundaries and location (Tretyak et. al., 2003). It should also be noted that from the point of view of its environmentalization "land use" is a territorial complex of optimal interrelationships of the soil, organism and atmosphere due to the composition and structure of the land, the farming system, and the air environment (Tretyak et. al., 2003). Land use is a system, that is, a qualitative set of interconnected components (Sokhnych, 2000).

In the scientific literature, land use optimization is considered as the organization of the production process in which the land is used in the most rational way, its productive properties provide, not the maximum, but ecologically sustainable effect for preserving soil fertility (Tretyak et. al., 2003). The implementation of measures to optimize land use is complicated by the need to reach a compromise between ecological and economic directions of optimization.

Research results

The territory of the Karmeliuk's Podillia National Nature Park was selected according to the following criteria: 1) the object has a unique (representative) value for the preservation of the biotic and landscape diversity of the region, the gene pool of rare and typical plants; 2) the territory is located at the intersection of the Buzkyi meridional and Steppe (Southern Ukrainian) latitudinal ecological corridors of the national level; 3) the maximum inclusion of natural territories (biocentres) when defining natural boundaries (such boundaries are the valley of the Savranka River and its small tributary in the northeast, the boundaries of large forest areas in the west, the southern boundary is the border with Odesa Region — from the village of Rybka in the west to the village of Berizky-Chechelnytski in the east); 4) the presence of historical and cultural values (Mudrak et. al., 2021). In order to create the conditions necessary for the NNP to perform its assigned functions, as well as for the organization of the nature protection practical activities, the target organization of the territory with different protection regimes, its functional zoning was carried out (Fig. 1).

According to the Law of Ukraine "On the Nature Reserve Fund of Ukraine", the recommendations of the International Union for Conservation of Nature for national parks, as well as a set of proposals by sociologists, the boundaries of the functional zones of the park may change in the process of changes caused by the influence of both natural and anthropogenic factors, according to the results of the territory activities and with the aim of preserving biodiversity at the level of landscapes, ecosystems, species, populations and genetic varieties. Determination of natural objects for changing the boundaries of the park functional zones (expansion of its territory), which are subject to special protection, should be carried out with appropriate justification, as they are representative. The landscapes of the park have a mosaic structure, the core of which are forest massifs concentrated in several isolated tracts. One of these tracts is "Stratiivska dacha", which fully belongs to the economic zone, which was created, first of all, for the implementation of economic activities aimed at fulfilling the tasks assigned to the park. Traditional nature management is carried out in this zone (Mudrak et. al., 2021). The results of recent years of research in this area indicate the growth of a number of species of the rare fraction of the flora, with different levels of protection. Their localization is concentrated mainly in blocks 72, 74–75 (Fig. 2).

The analysis of the research results indicates that a valuable gene pool of rare flora has been noted in these blocks, and in this regard, it is advisable to 72, 74–75 to be transferred from the economic zone to the zone of regulated recreation in order to limit economic activities for its preservation.

In order to preserve the representative ecosystems of the region, it is necessary to include the "Vyshenka" tract, which is located within the boundaries of the Chechelnytsk village council, as a part of the Karmeliuk's Podillia NNP with the right of permanent use. It is a complete landscape complex with relatively clear natural boundaries (Fig. 3). It is represented by different types of ecosystems: forest, meadow-steppe and wetland. This territory is located in the center of intensively used agrocenoses (Mudrak et. al., 2021).

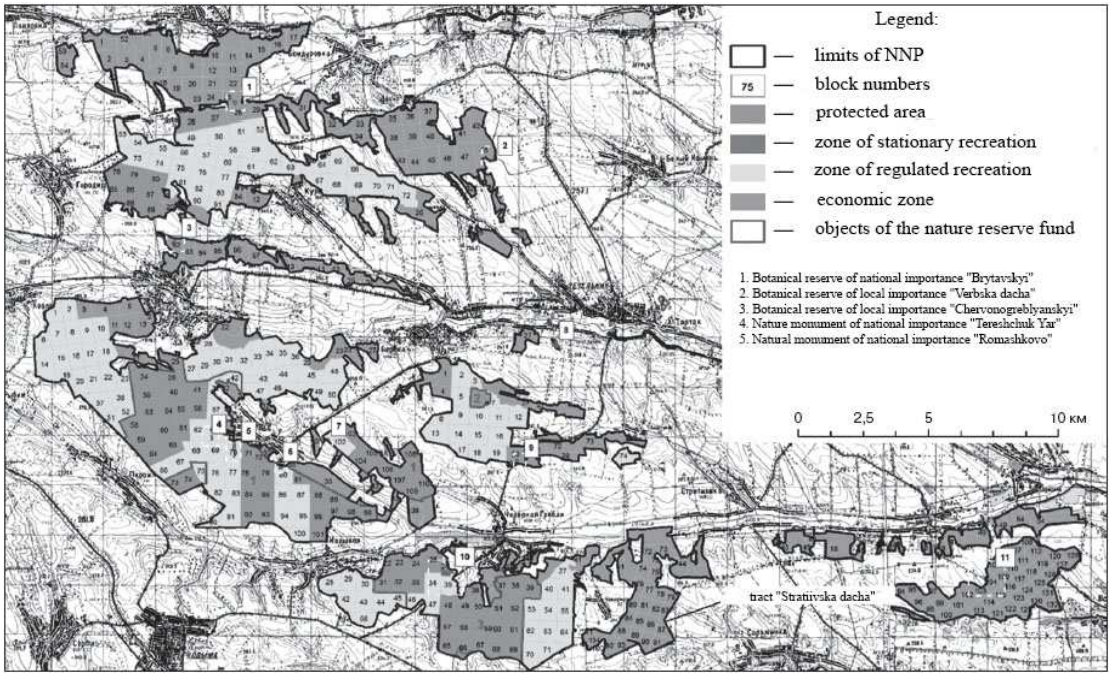

Fig. 1. *Map diagram of the functional zoning of the territory of the Karmeliuk's Podillia NNP*

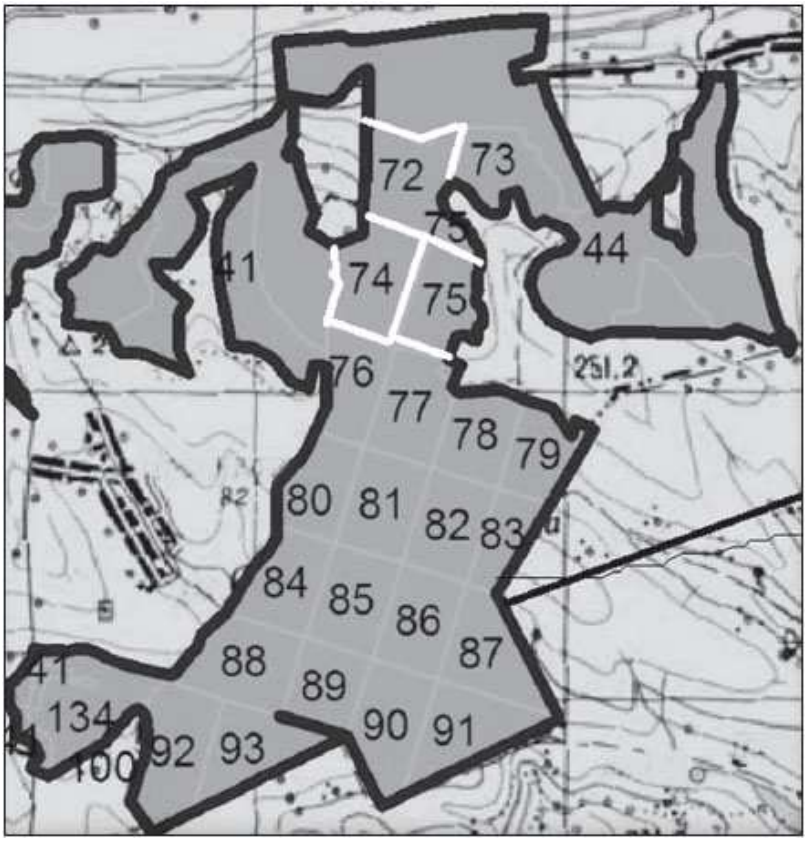

Fig. 2. *Scheme for the allocation of a regulated recreation zone in the tract "Stratiivska dacha"*

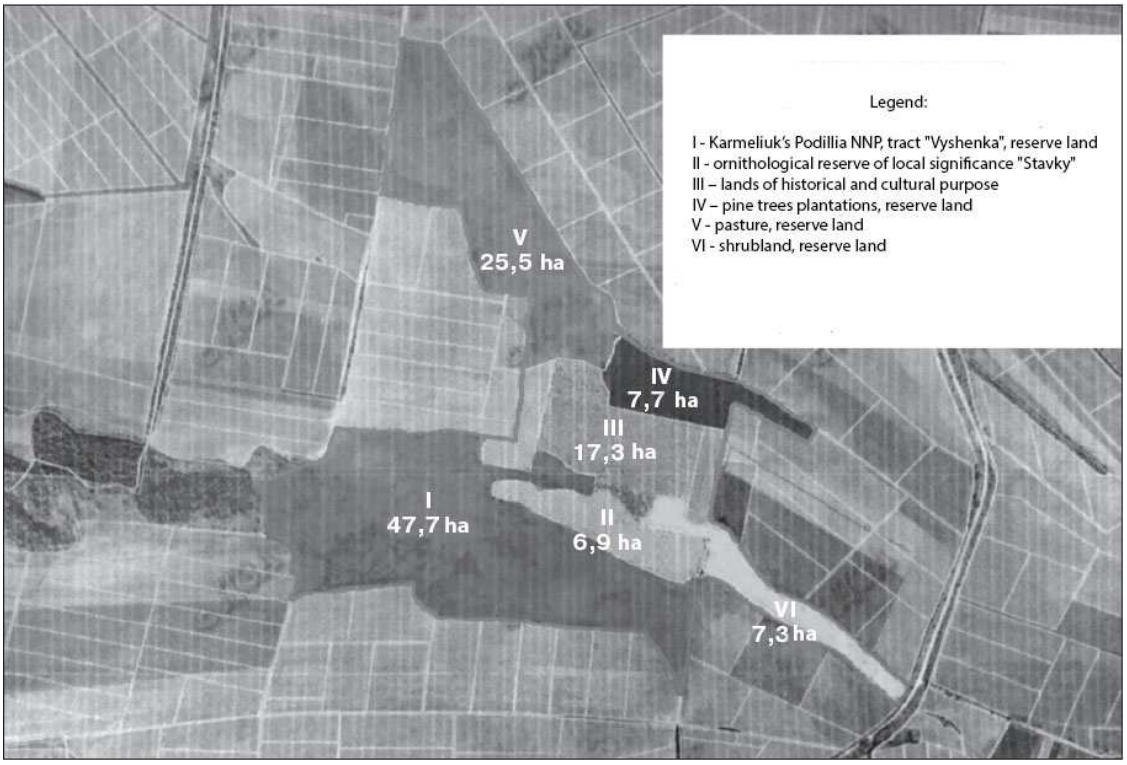

Fig. 3. *Scheme of the territory of the landscape complex designed for expansion and transfer to permanent use of the Karmeliuk's Podillia NNP*

Within the investigated landscape complex there are areas that are proposed to be included to the NNP: ornithological reserve of local importance "Stavky" - 6.9 ha; lands of historical and cultural purpose — 17.3; reserve land for forestry purposes — 7.7; agricultural stock — 25.5; shrubs, reserve land - 7.3 ha. The total area of these plots reaches 64.7 hectares. It is proposed to transfer these plots of land to the permanent use of the park in a complex with a plot of reserve land in the Vyshenka tract with an area of 47.7 hectares, which is currently part of the Karmeliuk's Podillia NNP without withdrawal from use. The total area that should be transferred to the permanent use of the NNP is 112.4 hectares.

The territory proposed to expand the NNP, is traditionally used by the population for recreation, because it is located near the village of Chechelnyk and has a relatively convenient road connection. The attractiveness of the landscape contributed to spontaneous recreational use of the territory. This had a negative impact on the environment: the burning of grass cover, its grazing by livestock, damage to trees and shrubs, the territory littering, picking up the rare plants for bouquets and their digging.

The changes proposed by us to the land use system of the Karmeliuk's Podillia National Nature Park are included in the second section of the ecological passport of the protected object, which indicates the location of the NNP in the land cadaster system and the functional zoning of the territory of the NNP (Datsenko et. al., 2021).

Conclusions.

The inclusion of adjacent areas to the park and their transfer to permanent use would make it possible to develop the scientific, ecological, educational and recreational potential of this natural landscape complex. Solving the land issue would provide an opportunity to attract budget funds for the implementation of the project on the creation of an infrastructure object of the "Science and Recreational Complex "Vyshenka" Park. This project provides for the organization of the territory and the construction of stationary recreation facilities. The creation of infrastructure will make it possible to provide the following recreational services: excursions, hiking, cycling, horseback riding, winter skiing and sledding, sports games, airsoft, reconstruction of historical events.

References

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