

## ECOLOGICAL AND GEOGRAPHICAL ASPECTS OF CONSERVATION OF LANDSCAPE DIVERSITY OF THE REGION

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**Abstract:** The article deals with the main issues related to the possibility of creating protected natural areas on the basis of determining the diversity of landscapes.

**Key words:** landscape diversity, landscape structure, biocentrism, Protected natural areas.

**Introduction:** The landscape structure of any territory is the result of its continuity of development in space and time, as well as its integrity. Therefore, natural components of different genesis interact and communicate with each other in a hierarchical structure, forming natural-territorial complexes (NTCs). This unity determines the various possibilities of economic use, performance and stability of the nodes and elements in each NTCs based on individual and interdependent characteristics. It is the diversity in the structure of the NTCs that influences the formation of biological diversity at the genetic, species and ecosystem levels. The stability of the natural geosystem leads to the diversity and accumulation of biological species. As a result, processes of stability, self-maintenance, evolution, and adaptation occur in biological species in such geocomplexes [2, 3].

Within the framework of landscape science, the concept of diversity of territorial systems has been developed much more poorly; there is still no generally accepted definition of the concept of landscape diversity, understanding of the essence and methods of studying this phenomenon as a whole and its individual aspects. Nevertheless, landscape diversity (LD) is recognized as the most important characteristic of territories, an integral component of the diversity of the natural environment [7].

Therefore, it is necessary to pay attention to the geographical basis for solving problems related to the regulation and optimization of the nature-man-society interaction. So, it is necessary to ensure the protection of the biological diversity of our planet and its individual regions, mainly in terms of units in the hierarchical parts of the landscape or geosystem. Therefore, in the process of planning and organizing a regional system of protected natural areas (PNA), it is necessary to take into account the general characteristics of landscapes. This approach, along with the stabilization of indicators of biological and landscape diversity, creates conditions for solving a number of socio-economic problems in the region: conservation and restoration of natural resources; providing favorable conditions for living and economic activity of the population; provision of programs for the development of recreation in the region, etc.

**MATERIALS AND RESEARCH METHODS.** Theoretical and methodological issues of formation and optimization of the regional system of specially protected natural areas are still debatable. As the researchers K.S.Ganzey A.N.Ivanov (2012), A.S.Sokolov (2014), E.A. Pozachenyuk,

A.A.Agienko (2017) and others have identified two main areas for assessing landscape diversity in landscape science. The first option is to qualitatively and quantitatively assess landscape diversity using landscape maps and a number of statistical coefficients. The second line of analysis of landscape diversity is associated with the use of satellite images and materials from remote sensing of the Earth.

Most of the existing approaches to the organization of the PNA system are typical of biocentrism and are mainly aimed at ensuring the protection of individual species. It is not taken into account that the habitat of biological species directly depends on the diversity of the landscape. The aforementioned unilateral approaches turn protected areas into "isolated islands". This type of conservation system is characterized by the fact that it does not have the ability to ensure the sustainability of ecosystem functions and to fully maintain and maintain the state of the environment that is optimal for human society [8, 9, 11, 12].

Therefore, in practice, PNA is evaluated as a disparate and incompletely formed system or a set of objects that are very loosely connected to each other. The natural framework of any region is the PNA system. It is necessary to practically complete the integration of the PNA region into a single system. To do this, the existing environmental system should have "zonal criteria" or "comparison criteria" that are relatively representative of regional landscapes and enriched with methods for assessing the ecological state [4, 5].

One of the main objectives of this study is to analyze changes in the ecological state of landscapes in the Ferghana Valley as a result of anthropogenic impact and substantiate the importance of the PNA system in ensuring the effectiveness of landscape diversity protection. To achieve the above goal, the following tasks are carried out step by step:

- 1) determining the structure of the landscape in the PNA system and assessing the degree of coverage of the landscape;
- 2) determine the ecological state of each landscape in the region and, based on the results, draw up a map reflecting the ecological state of landscapes;
- 3) to analyze the ecological state of regional landscapes depending on their natural features and features of their maximum and minimum changes by dividing landscapes into types, subtypes and classes;
- 4) analyze the effectiveness of nature conservation in taxonomic units of landscapes with relatively harsh natural conditions.

The object of the study is the desert, hilly and mountainous landscapes formed in the Ferghana Valley. In accordance with the unique landscape structure of the Fergana Valley, landscape types were divided into landscape groups depending on the composition of rocks, the nature of the relief, and differences in soil and vegetation cover. Anthropogenic influence was also taken into account when identifying some landscapes [10, 13, 14]. The territorial and taxonomic levels of anthropogenic impact on the ecological state of landscapes in the Ferghana Valley are determined using landscape structure analysis and GAT-MapInfo Professional 12 tools and other methods. When determining the ecological state of the landscape, the geocological coefficient ( $K_r$ ) is calculated according to the following formula by I.S.Aitov [1]:

$$K_r = \frac{C_P}{C_\Delta}$$

where,  $C_p$  -% - constant area of the geosystem in the area;  $C_\Delta$  -% - is the area of change allowed at the geosystem capability level. Показатели данной формулы оцениваются экспертами. The indicators of this formula are evaluated by experts. For example, N.F. Reimers (1978, 1992)  $C_\Delta$  determined an indicator of 30% for the zone of deciduous forests. Kr - according to the degree of importance, the state of the landscape is assessed according to the following gradations: satisfactory - more than 1.5; tight - 1.1-1.5; critical - 0.9-1.1; crisis situation - 0.5-0.9; catastrophic condition - <0.50. In this direction, it is required to determine the area of admissible change of the geosystem for the landscapes of the Ferghana Valley. When calculating the geocological coefficient of the landscapes of the Ferghana Valley, attention is also paid to the points scored to determine the ecological and economic balance of each landscape.

**Conclusion.** Landscape diversity is one of the most important physical and geographical characteristics of the territory. It is related to the resistance of NTC to loads, features of economic development and modern use, biodiversity, environmental potential and a number of other important properties. This makes it possible to use landscape diversity as one of the tools for environmental protection, and its very concept as a fairly productive theoretical and methodological basis for effective management decision-making in the field of nature management, conservation management, landscape planning, etc. In general, the identification of the landscape diversity of natural complexes should be considered as one of the areas of landscape analysis, closely related to landscape mapping, the study of the morphological structure of the landscape [8, 9].

As studies have shown, the largest number of NTC, poorly transformed by man, is observed in areas with a high degree of landscape diversity. Many of them coincide geographically or are located near sites with the status of specially protected natural areas. This makes it possible to recommend some sites with a high rate of landscape mosaicity, fragmentation and complexity of giving the status of a protected area or similar, given their environmental, recreational, aesthetic value.

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