



## Research Article

# OPTIMIZATION OF RECREATION-GEOECOLOGICAL SITUATION IN TURKISHTON-NUROTA MOUNTAIN GEOSYSTEMS

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## ABSTRACT

This article highlights the main approaches and principles for optimizing the geoecological situation in mountain geosystems for the purposes of recreational activities. Also, in order to optimize the situation in the region, scientific recommendations were given on the conservation of existing forests, the creation of new ones, the expansion of the area of fruit and ornamental gardens, and the area of protected natural areas.

## KEYWORDS

Geosystem, regional recreational systems, permitted norm, landscape approach, geoecological approach, natural complex, natural environment, ecological crisis, recreational resources, recreational areas, recreational zones, ecoforests, exposition.

## INTRODUCTION

In the development of recreational activity systems, the problem of rational use of natural resources based on the analysis and calculation of the heterogeneity

and variability of the landscape structure of the area is still very rare and is often not taken into account, the corresponding scientific recommendations are almost



non-existent. The increasing development of production forces in the republic, the increase in the well-being of the population, the use of natural resources, and primarily the study, analysis and consideration of the resource potential of landscapes require a change of attitude.

### THE MAIN RESULTS AND FINDINGS

Existing and developing landscape based on natural laws, including anthropogenic-recreational landscapes, should be considered as an object of regional organization of recreation activities. It is possible to achieve the highest sustainable result only if development in interaction with nature is taken into account. In other words, the only way to rationally use landscapes in recreational activities, to preserve landscape resources and living environment is the importance and necessity of landscape analysis [3].

Intensive use of the area for recreational activities, when the balance in the landscape, warning against various undesirable natural and anthropogenic processes, development of projects aimed at scientifically based use of the area in the future is considered important. This is evidence that only the landscape approach is the basis for the organization of territorial recreation systems. Among these, the landscape approach is important in considering the morphological parts of the landscape, regional differences, and its connections with other geosystems, for which the landscape map is the basis.

The optimal solution for nature protection in recreation areas is to rely on the geoecological approach to qualitatively change regional recreation systems.

Currently, the number of various industrial production, agricultural and raw material processing enterprises,

multi-branch farms, and various categories of entrepreneurs is increasing day by day. The amount of various harmful substances released into atmospheric air, flowing waters, natural and artificial water bodies has not decreased. Due to this, the importance of the geoecological approach is increasing.

The natural complex is the central subsystem (subsystem) of the task (functional) model of the use of nature in recreation activities. The condition of the natural complex is measured in terms of area, capacity, load (person/ha) and is characterized by special properties such as stability, attractiveness, reliability. The main focus is on the study of the load imposed by recreationists on natural complexes and the development of permissible standards of recreational load for different landscapes. In addition, it is important to take into account the size, level and character of the anthropogenic load, the level and nature of the anthropogenic load on natural complexes by the local population during the construction and operation of recreation facilities and directions.

The existing regional system consists of the following sub-systems:

- management of the technological impact on natural complexes by the material base of recreation infrastructures;
- management of the impact of recreation activities on natural complexes;
- management of the impact of production forces on natural complexes and recreation resources.

Recreation activities should be considered as a rationally organized economic network based on the principles of "preservation - conditions of use,



conditions of use - conditions of preservation" in the interaction between man and nature. The "philosophical" basis of this program is that the development of recreation areas is a mutual harmony of economic and ecological interests. Therefore, it is not without reason that recreational activities are often considered as a factor that increases the anthropogenic load on natural geocomplexes. However, at the same time, it should not be forgotten that recreation activities are manifested as a locomotive of environmentalization of life in whole regions or large areas.

In this study, geoecology is considered as a science that studies the interaction between human society and its activities in the field of recreation and the environment. One of the characteristic features of the current stage of society's development is the increase in man-made factors that pollute the environment, which in dangerous situations leads to an ecological crisis, primarily a crisis of recreational resources. Therefore, in recreation activities, the main attention should be paid to the ecological (sustainability) of recreation [10].

The sustainable ecology of recreation is determined by the level and nature of the impact of recreation activities on the environment, that is, on the atmosphere, water resources, lithological ground, flora and fauna. In this process, forest fires, soil erosion, and waste pollution can be encountered.

Mountain-forest areas are characterized by the fact that they embody geosystems prone to high fire safety. Mountain geosystems on the level of fire safety strongly differs except for n. Mountain topography has a strong influence on local climate conditions and its order. Predicting fire intensity and rate of spread in mountains is a complex problem. Therefore, natural

fires in unfavorable weather conditions can destroy large areas of vegetation within a few hours [1].

Mountainous regions also differ strongly in the nature of disposal of various wastes and wastes, generally characterized by a small coverage capacity compared to other regions. In mountainous conditions with fertile soil and warm climate, decomposition and alkalization processes take place quickly, in cold and low-fertility regions, plastic and canning containers are practically stored for a very long time. Burying garbage and waste causes pollution of underground water and other water bodies [2, 8].

Mountain-forest areas are important for locating recreation areas. However, it is necessary to take into account the other importance of the forest as a natural complex (it was discussed in detail in the previous sections). Therefore, the use of the forest in recreational activities is determined by the fact that it does not impair the quality of its other functions. From this point of view, the research area is distinguished by its richness in forests. For example, while the total area of Zomin National Nature Park is 23,894 ha, 17,171 ha of it is covered with forest, although not very densely. Mainly Zarafshan, Saur and Turkestan juniper trees occupy altitudes from 1700 m to 3300 m [1].

In the Nurota mountain-walnut grove reserve, wild apples and pine trees grow along with walnut groves. From the bushes: Turkestan hawthorn, red, three-leaved, zirk, irgay, wild vine can be found.

The basin of the Sangzor River is also very rich in plants (there are few trees), and it is noted that the phytocenotic diversity of the plant cover consists of 5 types, 10 subtypes, 18 xenotypes, 34 formations and 124 associations [6, p. 10]. From the point of view of recreation, representatives of 124 species belonging to



76 families belonging to 36 families of plants can be found only in the Zominsuv Basin [5, 4, 21-b]. Also, the number of species included in the "Red Book" of the Republic of Uzbekistan is 46 species only in protected areas, of which 18 species are in the Zomin reserve, and 30 species are in the Nurota reserve [4, p. 305].

The role of improving the ecological condition of the natural environment of forests and optimizing the existing geo-ecological conditions affects not only the mountainous regions, but also remote mountainous regions. Forests reduce the intensity of precipitation, slow down the melting of snow, as a result of which the saturation of groundwater increases, as a result, the attractiveness of the areas increases and the importance of recreation increases. Development of forest reclamation in the mountains is an important factor. A large number of varieties of walnuts, almonds, apples, pears, cherries, cherries, apricots, plums, acacias are used in mountain horticulture. It has been proven that orchards and vineyards can be located on slopes with a steepness of up to 200. A.A.Khonazarov (1983) recommended planting different assortments of plants for different heights, exposures and slopes of the slopes: on the slopes with heavily washed, low-fertility soil, it was recommended to create hedgerow forests consisting of acacia, juniper and shrubs [7].

Each of the above-mentioned places has its own ecological conditions. In order to create a recreation system in these areas, it is necessary to comprehensively study the ecological situation in these areas, assess their natural resources. After that, it is appropriate to develop measures for the protection of the nature of these places. After all, it is inevitable that nature will face various changes in any recreation or other regions. It is necessary to determine these measures after scientifically studying

the topography, water, climatic conditions, fauna and flora. Also, based on the nature of the objects to be built, nature protection measures are determined.

Taking into account the permanent impact of people on the environment, it is necessary to establish procedures for the protection of running water, trees, and wildlife in recreation areas. In the areas where tourists are held, it is advisable to move the paths on which they move from places that do not harm existing natural objects in the area. Also, it is necessary to implement procedures that limit the impact of passengers on the objects along the highways. In particular, it is a pity that such situations as writing various inscriptions on the rocks along the highways passing through the mountainous regions of Turkestan, Molguzar, Koytash and Nurota, and the removal of stones have not been controlled until now. Dumping of waste into water bodies, strict control of tree felling is also a very urgent issue today.

It is possible to develop traditional and intensive horticulture with fruits such as apples, pears, cherries, quinces in the mountainous and intermountain plains of the research area. are available. And the area of Garasha-Savruq bog is favorable for expanding the area of vineyards.

It is important to take steps to protect these resources until such time as recreation takes full advantage of them. Because, if natural recreation is mobilized to serve the population without studying the ecological conditions of important places and taking measures to protect it, it can lead to irreversible consequences [9].

Of course, it is necessary to try to establish and develop plantations of tea and medicinal plants in order to implement the Government's decisions and rational use of nature in the created artificial forests and parks

or in other relevant (climate conditions are suitable) areas.

Also: 1) In accordance with the decision No. 819 of the Cabinet of Ministers of the Republic of Uzbekistan dated October 11, 2018 "On measures to further develop the forestry sector and introduce innovative technologies in the Republic of Uzbekistan", together with the Ministry of Tourism and Cultural Heritage "in 2019-2025, Uzbekistan A plan of measures for the development of ecotourism infrastructure on the lands of the Forest Fund of the Republic" was developed. Accordingly, it is appropriate to establish recreation areas in the Bakhmal, G'allaorol, Forish, Zomin, Khojamushkent forest farms;

2) the southeastern border of the Nurota mountain-walnut reserve from Kyzilkisloq on the northern slope of the mountain to the foothills of Mikhin village; defining the southern border through the villages of Garashasoy Valley - Changir - Kolsari to the highway passing through the Sovurbel pass, and granting the status of "Nurota State National Nature Park" to a certain part of the reserve;

3) Establishment of the "Bakhmal National Nature Park" along the mountain slope of the border of the Zomin mountain-fir state reserve in the north to the width of the village of Boykungir in the north-west direction to the Koshtepa Pass, and to the state border in the south;

4) To the east of the Molguzar ridge, from the border of the Zomin National Nature Park (Duoba village) in the north-west direction, it is desirable to establish the "Molguzar National Nature Park", which includes the upper reaches of Ravotsoi - the upper reaches of Ravotsoi - the northern slope of the mountain - the "Molguzar National Nature Park" [10].

Implementation of this will optimize the use of the nature of Turkestan, Nurota, Molguzar mountains. It is known that the national nature parks are nature protection and recreation institutions that embody ecological and aesthetic value and are directed to use for nature protection, spiritual-educational, recreation-tourist (tourist) purposes [2].

### CONCLUSION

Implementation of planned technical and biological reclamation works in the above-mentioned mining areas, in places where raw materials for brick, cement, lime and other building materials are obtained, on mountain slopes, sub-mountain plains - hills, especially villages on the slopes of Nurota, Molguzar mountains, rivers and stream banks, existing water reservoirs, the surroundings of agricultural fields, the creation of ornamental and fruit gardens, tree groves, forests, parks, various sports grounds, golf courses, the organization of phytomelioration activities in pastures on a large scale, not only the rational use of the nature of the areas, but it also serves to create attractiveness and comfort for local residents, tourists and recreationists, as well as to increase the stability of geosystems.

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