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ASSESSMENT OF THE ECOLOGICAL CONDITION OF LANDSCAPES IN QOROVULBOZOR DISTRICT

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Abstract
This article provides an overview of the types of landscapes in Qorovulbozor district, their ecological condition, and the approaches to landscape assessment.

Keywords: Landscape, radioactive dust, atmosphere, alluvial, ecological crisis, sandy deserts, ecosystem, ecosystem forecast, xeromorphic soils, mesomorphic ecological landscape, intrazonal ecosystem, saxaul.

Introduction

The problem of conservation is becoming more complex day by day. Any environmental problem affects a person and his health at first. Atmospheric pollution not only affects the earth's atmosphere, but also endangers human life and the surrounding environment.

The primary essence of evaluating landscapes for a particular purpose lies in determining the suitability, convenience, or inconvenience of landscapes based on the specific needs and requirements of human society. An ecological approach to studying landscapes plays a significant role in solving various practical issues. As V.B. Sochava (1978) stated, ecology, in a broad sense, acts as a filter through which collected geographical data must be processed before being used to address agricultural or forestry-related problems.

In the western, northern, and northwestern parts of Qorovulbozor, gypsum desert landscapes have formed, consisting of alluvial and ancient alluvial plains. The eastern part of the district, along with portions of the northern area, features clay desert landscapes. The southeastern part of the district is dominated by sandy desert landscapes, which also include alluvial and ancient alluvial plains. In the northern and southern parts, there are partially stony desert landscapes, with remnant ridges present in these areas. Toward the southeast of Qorovulbozor, tugay (riparian forest) landscapes and alluvial delta plains have developed. According to ecological landscape groups, the majority of the Qorovulbozor area is characterized by xeromorphic soils,

indicating landscapes adapted to arid conditions. However, mesomorphic soils are found within the tugay landscapes. The western, partially southern, and northern parts of Qorovulbozor are classified as intrazonal ecosystems, encompassing waterlogged areas. Meanwhile, the eastern and northeastern parts fall within the desert ecosystem, where clay-based landscapes have formed. The southeastern part of the district is distinguished by sandy landscapes.

The resources embodied within a landscape are closely interconnected, forming a unified whole due to the exchange of matter and energy, and they mutually depend on and complement each other.

In a landscape, the small-scale circulation of matter and energy between components is always present. For example, the water reserves (runoff module) formed on the surface of desert zone landscapes due to atmospheric precipitation depend on factors such as the local relief, soil, the composition of rock formations, their mechanical structure, porosity, and the amount, duration, and intensity of precipitation. Even if the soil is fertile, the lack of sufficient heat and moisture renders the result ineffective. Therefore, utilizing any single resource within a landscape inevitably leads to the depletion or reduction of other resources in the same area. Furthermore, while one component may serve as a natural condition for a specific economic sector, it may simultaneously act as a material resource for another sector [2].

To ensure accurate results in landscape evaluation, the primary purpose of the assessment must be clearly defined. The main objective of landscape evaluation is to determine the order of development and the most optimal and effective ways to utilize the landscapes. Evaluations conducted with such a purpose are referred to as assessments performed for production purposes.

Another direction in evaluation work is ecological assessment, where the subject is the individual or population. The primary goal of such an assessment is to create a scientific basis for organizing working and recreational conditions in a proper and rational manner, as well as for protecting human health. This includes evaluating landscapes from an aesthetic perspective and for recreational purposes.

Research conducted in the deserts of Qorovulbozor revealed sandy tracks leading to Nog‘oratepa within dense saxaul forests. Upon entering, areas within the forests where waste had been dumped in deep pits were found to have groundwater seeping through, salinizing the soil to a stark white color. The hills were covered with small plants such as saxaul, poa, vatak, bromus, and delphinium semibarbatum. At the northwestern foothills of the Saritosh ridge, there are dunes and pathways of aeolian sands, which are accumulations caused by wind at the base of the plateau. These pathways are rich in vegetation, particularly featuring Calligonum plants. Such areas

can be classified as a distinct type or subtype of landscape. Beneath them lie Q2 (Middle Quaternary period) deposits [3].

A.G. Isachenko (1980) attempted to identify two main types or directions of evaluation based on its purpose. The first type focuses on determining the sequence of landscape development for economic use. This can be described as an evaluation aimed at identifying the best approaches to utilizing landscapes for production purposes. The aforementioned evaluations fall into this category [5].

The second direction in evaluation is called socio-ecological assessment. In this approach, landscapes are evaluated from the perspective of various aspects of human life.

When evaluating landscapes for a specific purpose, it is essential to anticipate how they may change under human influence and what consequences these changes might bring. It is necessary to predict the transformations in landscapes caused by human activities, such as agriculture, urban development, or construction projects, and to foresee the potential outcomes of these changes.

When the landscape ecological groups of Qorovulbozor district are evaluated, the area is classified as belonging to the xeromorphic landscape type. The majority of the district is in a moderately stable ecological condition, while the northeastern low-mountain areas are considered to be in a satisfactory state. In the central part of the district, the mesomorphic ecological landscape type is present, and its ecological condition is deemed moderate. In terms of the salinization levels of irrigated soils in Qorovulbozor district, 64% consist of slightly saline and desalinated soils, 21.8% are moderately saline soils, 12.6% are heavily saline soils, and 1.6% are solonchaks and strongly saline soils. Currently, groundwater levels have risen significantly in many areas, resulting in soils with a hydromorphic water regime. The drainage system in place amounts to 20 linear meters per hectare. There is a need to improve the efficiency of these drainage systems and enhance the overall effectiveness of land use. The crop yields in the district are currently at a very low level and require significant improvement [4].

In conclusion, we find it appropriate to propose the following recommendations:

1. Establish a recreational zone within the saxaul forests to enhance the are both ecologically and as a tourist destination.
2. Reduce environmental pollution by minimizing waste and preventing the degradation of ecosystems.
3. Strengthen sustainable landscapes by incorporating ecological considerations into the planning and design of administrative and communal facilities.

If these suggestions are implemented effectively, they will significantly contribute to the future development and prosperity of the district.

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