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O'RTACHO'L GEOEKOLOGIK MIKROZONASI

LANDSHAFTLARINING EKOLOGIK HOLATINI BAHOLASH

Annotatsiya: Ushbu maqolada tuproqlari o'rtacha sho'rlangan, kuchli antropogen o'zgartirilgan, yer osti suvlarining tabiiy drenaji nisbatan yaxshi bo'lgan, o'rtacha ifloslangan O'rtacho'l geoekologik mikrozonasining ekologik holati to'g'risida ma'lumot berilgan.

Kalit so'zlar: Zirabuloq – Ziyovuddin tog' tizmalari, O'rtacho'l geoekologik mikrozona, provinsiya, okrug, rayon, deflyatsiya, sho'rtob, sho'rxok, tuproq, geoekologik mikrozona, ekologik muvozanat, rekreatsion resurs, buyra qamish, juzg'un.

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ASSESSMENT OF THE ECOLOGICAL STATUS OF THE

LANDSCAPES OF THE MID-DESERT GEOECOLOGICAL

MICROZONE

Abstract: This article provides information on the ecological state of the Middle Desert geoeological microzone with moderately saline soils, strongly

anthropogenically altered soils, relatively good natural drainage of groundwater, and moderately polluted soils.

Keywords: Zirabulak-Ziyovuddin mountain range, Urtachol geoecological microzone, province, district, district, deflation, saline, solonchak, soil, geoecological microzone, ecological balance, recreational resource, curly reed, juzgun.

In the context of current global climate change, special attention is being given to studying the impact of reservoirs in arid regions on the transformation of surrounding landscapes, assessing their ecological conditions, analyzing recreational opportunities and their use, preserving biodiversity, and ensuring the sustainable use of these landscapes. In this regard, the study of the ecological condition of the landscapes of the Ortachol geoecological microzone is of great importance for conducting comprehensive research based on new scientific concepts aimed at maintaining landscape stability and promoting their effective utilization.

The region consists of low plains located in the southeastern part of Qiziltepa district. It is believed that the name "Ortachol" originates from its location between the vast steppes of Koktog, Malikchol, and Qarnabchol. The geoecological region is bordered by the Zirabuloq–Ziyovuddin mountain ranges to the northeast and south, while sloping gently towards the southwest in the direction of the Tudako‘l reservoir, forming a flat intermountain area with varying elevations. It lies approximately 45 km southwest of Navoi city and 45–50 km northeast of Bukhara city, with absolute elevations ranging from 220 to 300 meters in the upper parts, gradually descending to around 220 meters near the Tudako‘l reservoir. In ancient times, the Ortachol oasis—located between the Malik and Qarnob steppes—was known as a homeland for pastoral communities.

The relief varies from lowlands to uplands and is composed of sands and sandstones. The soils are suitable for cultivating all types of crops; however, due

to the relief conditions, alfalfa is considered more appropriate compared to other crops.

The soil cover and types of the Ortachol massif are highly diverse, comprising gypsum-containing light loamy soils, sandy loams, and sands, with mixtures of coarse sand, gravel, and pebbles, underlain by sandstone and Neogene period deposits.

The gray-brown soils are of light loamy and sandy texture and contain weak to moderate amounts of coarse sand, gravel, and pebbles. In Ortachol, irrigated lands slope downward toward the Tudako‘l Reservoir, with a difference in absolute elevation reaching up to 80 meters. As a result, vertical (downward) water erosion is more intense than lateral erosion. The areas adjacent to the Tudako‘l Reservoir are experiencing increasing waterlogging and salinization. In these areas, the groundwater table has risen to 1–2 meters. Furthermore, gypsum-containing gray-brown soils occupy 77.8% of the area.

Suffosion processes are widespread in these areas — the dissolution of water-soluble salts has accelerated subsidence and collapse in some locations. Sandy desert soils (12.3%) are prone to water erosion, while saline soils account for 2.9%. The remaining 7–10% consists of other soils, partially including takyr (clay-crust) soils. In this geoecological microzone, one of the main objectives is to implement agrotechnical measures, establish protective forest belts to mitigate the effects of wind erosion and hot dry winds (garmsel), and improve the land’s meliorative conditions.

In the irrigated areas of the Ortachol geoecological microzone, cultivated crops include cotton, wheat, barley, oats, flax, sesame, sunflower, maize, sorghum, and millet. The development of Ortachol began in 1973, following the launch of the Ortachol Canal. In the undeveloped parts of the region, wild plants such as tamarisk, bermudagrass, mint, reed, saltwort, foxtail, saline bermudagrass, sedge, camelthorn, wild spurge, blueweed, and saxaul grow naturally.

There is an ancient mulberry tree that is 600 years old, with a diameter of over 1 meter. It is said that the remaining mulberry trees in the area were planted by a shepherd named Amonbobo from the village of Jaloir in Navoi. These mulberry trees are estimated to be around 80–100 years old, and about 30 head of cattle were once grazed in the area.

The current landscapes of Ortachol have undergone various geographic conditions over a long historical period and still retain natural features of past eras.

These inherited characteristics are among the key factors that determine the current landscape's stability, biological productivity, ecological quality, and overall economic and social potential. In the geoeological region, agrolandscapes and desert-oasis landscapes occupy a leading position.

In the past, the Ortachol massif was sparsely populated, inhabited only by a small number of shepherds who raised livestock. Wild animals such as wolves, foxes, hares, jackals, and goitered gazelles (gazelles) once inhabited the area. It should be noted that the fact that Ortachol is surrounded on all sides by mountains, saxaul thickets, riparian forests, and irrigation channels has created a favorable habitat for the survival of wild animals.

In the riparian forests and around water bodies in this area, bird species such as pheasants, sandpipers, and ducks can be found. Ortachol is considered a unique and favorable permanent habitat for various bird species. Birds such as sparrows, larks, starlings, golden orioles, shrikes, magpies, and hoopoes inhabit the Ortachol region. Among the reptiles in this massif are lizards, tortoises, water snakes, sand boas, skinks, desert monitor lizards, moles, and hedgehogs.

The region's climate, in general, exhibits subtropical characteristics and is classified as a sharply continental desert climate, with a significant deficit of natural moisture. Compared to atmospheric precipitation, the potential evaporation (approximately 1900 mm) exceeds it by 15–17 times.

For several centuries, Ortachol served as an excellent natural pastureland for livestock. However, due to land development, species such as red tulips, goitered gazelles, and jackals are disappearing. As a result of landscape transformation, many animals are abandoning their native habitats in search of new living environments in distant areas. The road is asphalt, but on both sides it runs through typical piedmont slopes and plains filled with proluvial deposits. Gravel quarries are common, and in many places, road conditions are substandard due to surface degradation.

Currently, due to excessive anthropogenic pressure, landscape productivity and pasture resource fertility have declined, leading to ecological impoverishment.

In order to address the problems in the Ortachol geoecological microzone, the following recommendations are considered appropriate:

- A comprehensive approach should be undertaken in the Ortachol geoecological microzone, with particular attention paid to environmental protection—especially soil conservation—ensuring that all activities comply with established standards. Special focus must be given to the potential for secondary soil salinization and the likelihood of erosion processes occurring in gypsum-containing soils;
- In cooperation with the regional forestry department, shelterbelt plantations should be established to prevent wind erosion and mitigate the impact of hot, dry winds (garmsel);

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