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Ibrahim Tashpulatovich Azimov

Tashkent State Pedagogical University named after Nizami (PhD), Department of Biology and Methods of its Teaching

Nodira Burhonovna Sultanova

Tashkent State Pedagogical University named after Nizami
Senior lecturer at the Department of Geography and Methods of its Teaching

Bekjon Ibrogim ugli Azimov

Tashkent State Pedagogical University named after Nizami
Lecturer at the Department of Zoology and Anatomy

INFLUENCE OF SOIL TYPES AND CLIMATIC FACTORS ON THE VEGETABLE COVER OF THE AHANGARAN RIVER BASIN

Abstract: Physical-geographical classification of Akhangaran basin is given in this article. Information on the soil types, climate, annual rainfall and human impact on vegetation cover of the Akhangaran river basin was showed. So, this article describes the process of desertification and the factors that anthropogenic influence to them.

Key words: Tien-Shan, Chatkal and Kurama mountain, altitude zones, landscape, ecosystem, climate, soil, precipitation, desert, adyr, mountain, pasture.

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Introduction

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The Akhangaran River Basin (5260 km²) is a mountainous region, dominated by south - western mountain ranges of the Tien Shan Mountain ranges, with both banks of the Akhangaran (233km) river, flowing between Chatkal and Kurama Mountains of western Tien - Shan Mountain (N 41^o 25 and E 71^o 50) [2,3].

Western Tien - Shan (Chinese - skyhigh mountains, Turkish name - God Mountain) is one of the largest mountains in Central Asia and Middle Asia, located between 40 and 45 degrees of northern latitude, 67-95 degrees of eastern longitude. Most of them are in China and Kyrgyzstan, and the north-west ridges are in Kazakhstan, only south-west ranges are located in Uzbekistan. West Tien - Shan is represented to the south-west as elastic, and involves of Karjontog, Ugom, Pskom, Koksuv, Chatkal and

Kurama Mountain ridges, the area under study belongs to the last two ridges [1,8,9].

There are four altitude zones in Uzbekistan, each of them has its own unique elementary landscape. Elementary landscape means that each plant species grows in a specific substrate or soil type. The regions are genetically diverse ecosystems, each of them has its own unique law of development [6].

The components, including those of plant communities that are closely related to the rest of the components and their role in sustainable development of ecosystems, it is necessary that some parameters need to be identified, include of indicators such as the structure of the basin, geological structure, soil, altitude, climate, precipitation, seasonal temperature, and vegetation days [5,7].

The quantitative and qualitative characteristics of each of the natural indicators are different in each region; each of them has its own unique elementary landscapes. In all regions or ecosystems, only the

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plant component is a biotic component that produces biomass (energy). The other components are abiotic, and there are physiographic components that support its sustainable development.

In the study of each physiographic and administrative area, the botanical or physiographic content of the area is determined and evaluated by identifying its distinctive, comparative characteristics.

All landscape components of the Chirchik-Akhangaran basin, including the soil type of the Tashkent Alatau or western Tien - Shan Mountain ridges, have been studied and evaluated by many soil scientists and landscape scientists.

Physiographically, according to the structure of the Akhangaran river basin, almost all geomorphological phases occur in all highlands (300 - 3745 m above sea level), each of them forms a unique elementary landscape or genetically diverse of ecological system. Each of them has its own unique law of development, and the other has unique natural indicators, such as soil types, plant communities and natural conditions. The following regions and types of soil are distributed in the Akhangaran river basin (5260 km²) [3,4,10].

1. Desert zone - (300-500 m) sediment, sandy and light gray soils. On irrigated lands along the river valleys, there are grassy, marsh meadow soils on the basis of light-gray soils, with small alluvial soft beds, with saline sediment at a depth of 1-3 m. The vegetation period of the communities is 120 days. Average annual precipitation is 220-280 mm. Maximum and minimum air temperature at C⁰, it is -3⁰-5⁰ in January and -22⁰ -26⁰ in July. Plant types. Ephemeral type: carecita – poeta; the type of semi-bushes: salty-wormwood; galofite type: Tamarix hispida, Artemisia ferganensis, Halocharis hispida.

2. Adyr - (500-1200, 1500 m), there are 3 types of gray soils: light gray, typical gray and brown gray soils. The altitude above sea level is - 500-1200 (1500) m. The vegetation period of the communities is 180 days, with an average annual rainfall of 530-550 mm, maximum and minimum air temperature at C⁰, it is + 6 + 38,3. The plant types are the ephemerooids, the Turan dry steppe type: Agropyron trichophorum, Hordeum bulbosum.

3. Mountain-1500-2500 (2700 m) brown gray, brown forest soil type. The altitude above sea level is - 1500-2500 (2600), Community vegetation period is 200 days, average annual rainfall is - 607-734 mm, Maximum and minimum air temperature at C⁰, it is +8 (12) +35.3. Plant types: Mix tree and are favorable conditions for shrubs, broad-leaved forests, juniper forests.

4. Pasture – on high mountain slopes above 2700 m - light brown (light brown) high-altitude soil, swamp, meadow steppe alpine grass types, meadows and swamps on some springs. The altitude above sea level is 2700 m, the vegetation period is 170 days, the average annual rainfall is 750 mm, the maximum and

minimum air temperature at C⁰. Plant types. Mountain community: Prangos pabularia, Ferula tenuisecta, F. prangifolia; sub alp grasslands: Cousinia bonvalotii, Festuca valesiaca. The steep deserts of the high mountain sod: Festuca valesiaca; mountain xerophiles: Festuca valesiaca, Tragacantha, Cousinia bonvalotii, Esparset.

5. Rivers and lakes - swamps, meadows (water banks), saline soils, swamps, meadows and saline soil types (tugai) along the azonal coast. The altitude above sea level is - 250-300 m, vegetation period of communities is 280 days, maximum and minimum air temperature at C⁰, it is -3-5⁰, -38-40⁰. Plant types: Grass tugai (Fragmites, Glycyrrhiza): willow, poplar, tamarix are grown in the forests and shrub tugai plant communities.

The most common types of soil and other environmental components in the basin are the main biomass-producing ecosystems, as they are located in the hills and mountains.

The Akhangaran River Basin is also called the valley between the Kurama and Chatkal mountains. According to many scientists, this region is an independent natural territorial zone and is a physiographic region with a range of ecosystems with its specific climate, soil, geological structure and ecological environment. Scientists first isolated the Akhangaran river basin within the Angren Physiographic Region and later included of Chirchik-Angren Physiographic District. Therefore, we analyzed the climatic conditions of the natural conditions based on the data of meteorological stations of the region based on the quantity and quality indicators. Although each region has its own climate, it can be described as a set of features. The basin's climate is sharply continental with cold winters and hot summers, with the bulk of precipitation falling in spring and winter. The average temperature of January is -3-5⁰ C, in July + 22+26⁰ C, with annual precipitation of 220-280 mm. However, there is a significant difference between mountains and hills in terms of temperature and precipitation.

Vegetation in the Akhangaran river basin is 180-200 days, with more than half of the plant growing and producing natural pastures. In the grazing area, livestock is grazed only in the summer, the rests is in the lower mountains, and in the hills throughout the year.

The climatic characteristics of the studied basin, its natural botanical value, that is, the sustainable development of plant communities, are evident in its climate. However, there are many types of anthropogenic factors in the basin in ecological condition: overgrazing, unauthorized use of plant communities, haymaking, harvesting of medicinal plants, cutting of trees and shrubs, construction of roads, new lands. Many environmental factors, such as crop cultivation, lead to the transformation of vegetation cover communities. In particular, large

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constructions such as the Akhangaran Cement Plant, coal mines and quarries cause environmental degradation. Laws of the Republic of Uzbekistan on protection of environment, including flora from desertification, conservation of their genetic gene pool, environmental monitoring of the environment by the Cabinet of Ministers of the Republic of Uzbekistan were showed.

Therefore, the most dynamic basin in the Tashkent region is the study of the natural conditions and the biomass (energy) component of all ecosystems, namely the phytocenotic diversity of plant cover and their current composition, structure, mechanisms and transformation processes.

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