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J11402-001

Smirnova E.V., Kadyrova R.G.

**SOILS AND LANDSCAPES OF THE REGION OF THE WESTERN
PREDKAMYA**

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Abstract. The paper discusses the features of soil conditions Nizhnemeshinskoy landscape area, located in the area of West before Kama river on the territory of the Republic of Tatarstan. Characterized landscapes and soils formed on the eluvial-diluvial and alluvial deposits, which differ in their morphological properties, complicated structure of soil and unique originality. These areas are involved in long-term economic use and need special protection.

Keywords: soil, soil morphology, natural and man-made landscapes, the parent rocks, soil particle size distribution, soil neoplasms.

In the conditions of anthropogenic changes in natural landscapes associated with long-existing technological and residential development, one of the ways to preserve their natural and biological potential is the study of soil territories occupied natural-territorial complexes of various dimensions. Studying the properties of soil as a central component of any landscape, provides information to predict change and preserve the ecological potential of natural and anthropogenic systems. In this regard, the study of the features of soil landscape complexes is an urgent task.

Investigation of soil-landscape features Nizhnemeshinskoy landscape area located in the area of West before Kama river, conducted for 2010-2013. By laying the track complex profile around the city of Kazan. It is the largest town, located in the west of the studied landscape area.

The aim was to study the morphological properties of soils formed within the area described by the landscape and reflect the ecological status of the territory.

The paper presents data on soil profiles integrated geographic profile plotted within Nizhnemeshenskoy subarctic district relating to Subboreal semihumid northern

landscape zone, subzone deciduous landscape [3]. Stuffy profile crossed the characteristic elements of the local landscape and passed through the watershed watershed slopes and terraces to the river valleys, r. Knox and r. Kazanka. These watershed areas and slope complexes have small deviations (up to 2 degree), indicating that the nature slightly elevated territory. The climate is temperate continental with wet and cool summers and moderately cold and snowy winter. Annual precipitation ranges from 520 - 540 mm, large part accounts for the warm period [2]. One of the major waterways in the area is r. Kazanka numerous tributaries, one of which is r. Knox has no permanent drain. According geobotanical zoning [3], this landscaped area is located in the Volga-Kama sublimely flat region of northern deciduous forests with spruce and pine-lowland deciduous and pine forests of grass. There is a high proportion of meadow communities. Since the area occupied by meadows within the area ranges from 2.4% in the basin. Kazanka and reaches 63.5% in the basin r.Knox. Parent rocks on watersheds and slopes are presented eluvial-diluvial and alluvial deposits, which include those dominated by loams, sands, sandy loams. Floodplain bench complex r. Kazanka presented sandy, sandy loam and loamy rocks [1]. Landscape structure of the district fully reflect the relationship of its components and has quite a wide range of soil-forming factors that determines a variety of types and varieties of soils formed.

The first section of the complex profile was laid on top of the watershed (lined part) Kazanka rivers and Knox (Fig. 1). After a detailed morphological description of the soil has been defined as turf small podzolic shallow arable loamy. Parent rocks is carbonate-free eluvial-deluvial loam. Vegetation (secondary) - apple orchard, herb cover is represented sedge-forb association. Marked differentiation profile granulometric composition. So the mechanical composition of the upper part of the profile is characterized as medium loamy, at a depth of 100 cm from the surface (B2 horizon) is defined as loam, and at a depth of 150 cm and below - as clay.



Fig. 1. Satellite image of Kazan with a resolution of 0.5 m.

Second cut was laid in the middle of slightly gentle slope toward the floodplain r.Knox. After morphological description of the soil is defined as moderately medium loamy gray forest loam underlain by talus deposits of ancient alluvial. Vegetation - planting birch with a predominance in the sedge grass cover, dandelion, plantain. In the soil profile noticeable differentiation granulometric composition. In the upper part of the profile it is defined as medium loam in the middle part - sandy loam and the bottom - light loam, which is probably due to the particle size distribution of the underlying sediments.

Slightly gentle slope in a line toward the floodplain. Knox was revealed dark gray forest moderately loamy soil on diluvial loam, cut number 3 (Fig. 1).

In the central part of the floodplain. Knox was opened itself rich alluvial soil turf, cut number 4. In morphological terms in the upper part of the profile observed

Mild bedding soil-forming alluvium. In the horizon, does not contain elements gleevoj, maternal breed differs weak residual humus.

Fifth incision was laid near the first terrace above the floodplain district. Kazanka (Fig. 1), which is composed ancient alluvial deposits. The soil was identified as poorly differentiated medium turf small podzolic sand on ancient sediments profile poorly differentiated, granulometric composition is characterized as loose sand. Secondary vegetation represented sagebrush sedge grass association.

Morphological characteristics of sod-podzolic, gray forest and dark gray forest soils should include siliceous powder streaks (shown in the middle part of the profile in the form of a whitish mass, covering the structural units) and streaks of humus in the form of chocolate films on the faces of the structural units. Their presence is related to soil formation under mixed and deciduous forests. Morphological characteristics of podzolic soil include glandular clusters as ordzanda penetrating the lower part of the profile and leading to its compaction.

Landscape structure of the investigated area and burial grounds directly integrated profile is characterized by rather wide range of environmental conditions, which leads to high soil diversity.

The soil cover is represented by a combination of complexes and automorphic and hydromorphic soils, characteristic of the northern Subboreal semigumid landscape zone. Diversity of natural conditions, dynamics and activity of soil-forming processes, particle size differences and the chemical composition of Quaternary sediments identified a variety of soil area.

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