

SOIL COVER IN FLOODPLAINS OF SMALL RIVERS IN THE NATURE RESERVE «STOLBY»

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The reserve «Stolby» is a famous natural complex, located near the large Krasnoyarsk city. High anthropogenic pressure and industrial emissions have a negative impact on this territory, particularly on the soil. Great number of works is devoted to study automorphic soils and hydromorphic soils have already been fully explored. It is necessary to identify the properties of the soil cover at all landscape elements for effective environmental management and monitoring.

The reserve territory has several protected areas which are especially protected and prohibited for entrance (buffer), open for visits (tourist excursion zone), for recreational use (security zone) and the rest infrastructure. Our studies were carried out in Kaltat river valleys (the left tributary of the river Bazaikha), Volozhny creek (a tributary of Big Sliznevo). Researched areas are located in different protection zones.

The river ecosystems play an important role in maintaining the global environmental equilibrium and water exchange. Floodplains are the most productive landscapes, combining the high activity of biological and geological factors.

Alluvial sedimentation in the territory of the reserve «Stolby» has certain unique features such as high degree of dismemberment of relief in conditions of low mountains, with a wide variety of bedrock (shale, limestone, sandstone, dolomite, sienitnye intrusion) overlain by a cover of loose proluvial-deluvial deposits. These factors affect the granulometric composition and mineralogical characteristics of the parent rock and soil.

The soil profile is shortened and does not exceed 30 cm for soils low floodplain. A soil profile can be up to 60-70 cm in more favorable geomorphological conditions. The soil profile include gravel and stones (>80 mm) allowing us to use Sceletic qualifier.

Chemical characteristics of soil depend on the geology of the area. CaCO_3 content is high (10 %) in the soil of Volozhny stream. There are rocks containing limestone, dolomite and siderite. CaCO_3 content is 3-4 % in soils of the Kaltat.

The content of total organic carbon (Turin) is 7-11 % in the upper horizon. Actual acidity pH varies from 6.1 – 6.7 (Kaltat) to 6.1 – 7.6 (Voloshny).

We have identified soil types: Gleyic-histic Fluvisol (Skeletal, Dystric) and Dystric Fluvisols (Skeletal) in Kaltat river; Calcaric Eutric Fluvisols(Skeletal) in Volozhny creek.