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Population dynamics of rodents on technogenic territories the Ural Mountains

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The Urals are an old mountainous region in Russia, its mining and metallurgical industries are 300 years old. Although Ural soils are diverse in the composition and properties, within the limits of forest phytocoenoses from the Polar to the Southern Urals they are acid, poor in N and P and differ mainly in the K and humus contents which depend on the phytocoenosis type and on the relief peculiarities.

The greatest disposal areas result from mining, especially at gold, platinum and diamond alluvial deposits (e.g. during ca.300 years only 2 % of the disturbed soil has been overgrown in the forest zone in the Middle Urals.

Genetic heterogeneity of animal populations is maintained by ecological mechanisms among which of great importance is the dynamics of the spatial structure. Mass marking of rodents in the North Ural areas disturbed, by mining has shown that the animals use here a much smaller territory than in their natural biotopes. They form local relatively isolated and rather permanent settlements on dumps. Travellings in the dumps are restricted and do not exceed 200-500 m. Such changes in the animal spatial organisation result from anthropogenic alterations of the natural biogeocoenotic structure. The average population density is very low on the dumps, within the limits of the settlements it is much higher. Lack of the reserve space in the dumps suitable for the arrangement of new settlements brings to the achievement of the upper limit of the environmental "capacity" and to a start of density regulating mechanisms. These mechanisms restrict breeding of the resident inhabitants and penetration from the neighbouring stations of distant habitats of potential competitors for the dump resources. Technogenic alteration of the environment causes formation of local, relatively autonomic spatial groupings in natural populations of rodents that differ from natural intrapopulational groupings in the parameters of the main processes.