

Regional landscape-geochemical investigations

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Landscape-geochemical investigations being carried out on the territory of the Russian Federation cover a number of Russia's regions (the southern part of the Great Russian Plain, the Northern Caucasus, East and West Siberia). Their total area is about 1 million km². The investigations showed that landscape-geochemical mapping must be the basis for both qualitative and quantitative assessment of the ecological status and monitoring of regions, choosing the ways of their reclamation and should be used during prospecting of mineral deposits by geochemical methods.

A new technique has been developed and tested that enables to mark off the areas which differ in sets of outer factors of chemical elements' migration under natural and anthropogenic conditions and to determine the trends of the development of concrete changes within the region under investigation.

On the grounds of the multitude of facts (more than 10000 lithochemical and biogeochemical samples (of soils and plants) has been collected and analyzed), the consistent patterns of chemical elements' distribution within both large biosphere's structures and particular geochemical landscapes are determined. The trends of qualitative and quantitative ecological-geochemical changes influenced by natural and technogenic factors are ascertained. Dividing the areas into districts with respect to the conditions of effective prospecting of mineral deposits by geochemical methods on the landscape-geochemical basis has been carried out as well.

The analysis of the landscape-geochemical structure of a region makes possible the origin of geochemical anomalies and the extent of the influencing of various natural and anthropogenic factors on these anomalies to be determined.