

Landscape - geochemical cartographing of background and technogenic territories in Southwest Bulgaria

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abstract

The realizing of landscape - geochemical cartographing demands a carrying out of detail precartographic investigations. There, on the first place is to be determined the technogenic apparatus, the system of concepts and science classification of liable to cartographing objects. An available information base is studied, a system of approaches and methods is produced, which secure a process of cartographing . A structural geographic patterns of cartographic objects are made. On the base of own terrain and laboratory works, characteristics of migration, differentiation and accumulation of fixed pollutants (heavy metals) are made clear in background and technogenic territories in Southwest Bulgaria. Investigations are made for the concentration in a number of heavy metals : Pb, Zn, Cu, Cd, Cr, Co, Ni, Mn ; in the soils, rocks, vegetation cover and in the bed deposits in 10 reserves (2 are biospheric ones) and some technogenic territories. On the base of preliminary landscape maps in the investigation in the terrain works are spreaded representative sections, which include specific landscape - geochemical catens in the investigated area. Territories with higher total concentration and mobil forms of heavy metals are determined in comparison to the local background and fixed national and international concentrations available. The basic characteristics of radial (vertical) and lateral (horizontal, slopedown) differentiation of chemical elements are revealed in investigated landscapes.

Operative ecologic - geochemical cartoschemes are used for estimation the quality situation of the investigated landscapes. Concentrations of individual elements in the rocks, soils, vegetation and bed deposits are mapped. Series of maps are made of individual background territories and technogenic sections. It is interesting to note, the comparison between investigated background territories shows as well as different concentrations of individual elements, and their kind of migration and differentiation. This fact is determined in highest degree by specific litogeochemical characteristics. The maps of a special interest are with plotted chemical - analytic results from investigations of bed deposits in the basin of river Struma in Southwest Bulgaria. The areas with greatest concentration of investigated pollutants are outlined, as the river parts with minimum concentration of heavy metals.

The ecologic - geochemical maps made are very important for realization the environmental monitoring bases in Bulgaria. Biogeochemical data obtained are interesting base to be compared to another investigation in European and world regions. Repeating of the investigations and cartographing in 5 - 7 years period allows the revealing of character and speed of natural and anthropogenic differences in the environment.