The Ecological-Geochemical Assessment in Recreational Zones of Moscow Based on the Study of Three Environmental Components (Soil, Vegetation, Atmospheric Air)

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The study was performed from June to September 2018 on the territory of seven Moscow parks (Losiny Ostrov, Sokolniki, Ostankino, Izmailovo, Tsaritsyno, Kuzminki-Lublino, Victory Park) to examine the level of potentially toxic elements in recreational areas. To assess atmospheric deposition of elements active biomonitoring or moss bag technique was applied. In addition, sampling of soil and vegetation was carried out at three locations in each park with varying degrees of anthropogenic impact. Elemental composition of samples was determined by instrumental neutron activation analysis at the reactor IBR-2 of FLNP, JINR. Such elements as Cd, Cu and Pb were determined by atomic absorption spectrometry. The total pollution index was calculated for the assessment of the levels of pollution. The highest pollution was characteristic for soils, which is associated with its depositing capacity and long period of pollutants impact. Comparing parks, the highest concentrations of elements were determined for sites located close to roads in Elk Island, Izmailovo, Tsaritsyno and Kuzminki-Lublino.