

## The role of humid subtropical forests and forest soils in the stability of national parks (on the example of Mtirala National Park in Ajara, Georgia)

*Besik Kalandadze<sup>1</sup>, Gero Weber<sup>2</sup>, Ilia Kalandadze<sup>1</sup>, Gulnara Aptsiauri<sup>1</sup>*

E-mail: [besik.kalandadze@tsu.ge](mailto:besik.kalandadze@tsu.ge)

<sup>1</sup>Department of Geography, Faculty of Exact and Natural Sciences, Iv. Javakhishvili Tbilisi State University  
#1, I. Chavchavadze Avenue, Tbilisi 0179, Georgia

<sup>2</sup>Institut of Geography, Saarland University, 151150 D-66041, Saarbrücken, Germany

Many-year-long observations over the dynamics of the surface water quality evidence a growing number of cases of extremely high concentrations of pollutants in water bodies. Recently, particular attention has been paid to the issues of ecology of the surface water bodies, state of infiltration waters from the soil and their impact on surface water bodies and water flow, assessment of degree of technogenic impact and identification of the pollutants of a technogenic origin. Monitoring the quality, ecological state and protection status of surface waters is not done regularly in the country. In addition, no criteria to determine the degree of pollution are developed. Following the above-mentioned, an eco-chemical study of surface waters, identification of the sources of natural and technogenic pollution and their role in total pollution is a much needed and topical issue, as surface waters are used both, for drinking-and-economic and recreational purposes. There are three main types of soil identified in Mtirala National Park: Krasnozems (Nitisols Feralic) spread up to 300 m from the sea level, Yellow-brown soils (Acrisols Haplic) spread 400-1000 m from the sea level and brown soils (Distric Cambisols) spread at 800-1800 m above sea level. The ecologically clean environment is ideal for the stability and cleanliness of the drinking water supply. The reserves of fresh drinking water are distributed unevenly in the world on the one hand and the available water resources reduce gradually on the other hand. Consequently, saving and using the water rationally and protecting it from pollution are very important issues. Often, various elements in the soil and humid climate contribute to the disturbance of the established balance and both, surface and ground waterget polluted