

Mapping and Assessment of Samtskhe-Javakheti Ecosystems

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Samtskhe-Javakheti is a mountainous region in Georgia, with exceptional ecosystems throughout the entire Caucasus. Mountain regions are commonly more diverse than the lowlands and therefore have prime conservation, intrinsic spiritual and aesthetic values. Mountain ecosystems are essential for global biodiversity [6]. However, natural systems are rapidly changing [8]. The degradation of ecosystem services often causes significant harms to human well-being [7]. SDG target 15.4 states, 'by 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development' [9]. The results of the Samtskhe-Javakheti ecosystem research, carried out between 2008 and 2017, have been presented in the paper.

Samtskhe-Javakheti covers 6 413 km². There are remarkable variety of ecosystems. The climatic, lithological, topographic, paleogeographical factors and human activities determine the contrasting character of the ecosystems. The study area is located above 745 up to 3301 m. Such a wide range of elevation classes determines the altitudinal zonation, which supports ecosystem diversity of the region.

Main factors of Samtskhe-Javakheti ecosystem diversity are as follows: 1. Influence of the Black Sea and proximity to the western Georgia humid regions; 2. Increase of continental climate characteristics eastwards and southwards; 3. Rift valley effect, low precipitation and high summer temperatures; 4. Effects of high volcanic plateaus; 5. Closeness of the Anatolia region; and 6. Paleogeographical factor.

Main research outcome is the Samtskhe-Javakheti region ecosystem map. We used the program ArcGIS for mapping and creation of databases. Nearly, 20 types of ecosystems were identified. We applied Braun-Blanquet approach [5] to classify vegetation. Apart the ecosystems, mapping also included identification of the transformed and degraded systems, which are inseparable parts of the local environment and land-use.

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