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Climate change impacts on the forest landscapes of small Caucasus

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The main purpose of this work is to determine climate change impacts on the forest landscapes of Small Caucasus. The research is based on the Concept of spatial-temporal analysis and synthesis of Natural-territorial Complexes (NTCs), developed at Tbilisi State University under the guidance of Prof. N. Beruchashvili. In the work mainly are used field materials, gathered in different landscapes of Small Caucasus and, also forestry data, scattered in different scientific and statistical sources, etc. During forwarding, about 300 filed plots were described and analyzed practically in all sorts and kinds of a landscape. The impacts of climate change were valued considering 3 main parameters, such as the change of forest area, the degree of fragmentation of landscapes and the productivity of vegetation. This region, which is not rather well investigated from point of view of climate change, encompasses approximately 5.4 thousand sq km. The most area of forests is concentrated in middle-mountain landscapes with prevalence of beech and dark-coniferous species, which occupies roughly 20% of total area of region. Landscape approach allowed determining modern condition, forest productivity trends and risks of change to climate change of different landscapes. The special place is assign to determining productivity of forest landscapes according to different daily geo-conditions, which give possibility to fix quite exactly the resources of phytomass in different landscapes and its dynamics. In this term, a high risk landscapes occupies rather big territory, thereby reveal its risk to climate change is one of the main scientific result of research. Here are analyzed the mutual interaction between forest valuation parameters and some physiographic factors. On the complex analysis the degree of sensitivity of landscapes was determined. The middle-mountain forests are characterized by low and very low sensitivity, but here are areas with high risk to climate change. The research allowed to identify two areas that are offered to give the status of protected landscape. Conventionally, these territories are Dzama and Bevetiy areas.

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