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Biological Activity of Soils of Low-Mountain Reliefs in Adygeya after Forest Felling

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Abstract: Studies of the suite of metrics have been carried out which characterize the ecological condition of forest soils of low-mountain reliefs of the North-Western Caucasus Mountains. The goal of carried-out research was to evaluate the biological activity of soils that have different genesis at a different level of anthropogenic impact. Objects of research were Greyic Phaeozem of natural and disturbed ecosystems of the Adygeya Republic. For this, plots were investigated after forests clear felling that have different ages from 10 to 40 years old. Among used metrics, the following were present: the content of humus and active carbon, the activity of enzymes (catalase, invertase, dehydrogenase, urease, phosphatase), plenty of nitrogen-fixing bacteria of the Azotobacter genus. Their contingency with hydrothermal conditions was evaluated, also with bulk density, penetration resistance, medium reaction, hydrolytic acidity, the sum of absorbed bases, and other soil parameters. Features of biological activity of soils of low-mountain reliefs in Adygeya depending on terms of recovery after forest felling have been detected. The application of complex researches with the use of methods of biodiagnistics has shown, generally, the increased stability of Greyic Phaeozem of low-mountain reliefs in comparison with soils of areas of medium-altitude Mountains in Adygeya (Cambisol and Rendzik). The primary factor of degradation, which lowers the biological activity of soils, is erosion.

***Keywords*:** Forest soils, Adygeya Republic, Biodiagnistics, Anthropogenic impact