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Degradation of glaciation of the slopes of Mount Elbrus due to climate change

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The major node of the glaciation of the Caucasus Mountains - Elbrus (5642 m) in Russia continues to be explored in terms of global climate change. According to the results of such works, the dynamics of the change in the Elbrus glaciers at the end of the 20th and the beginning of the 21st centuries is given. The Figure-1 shows how glaciers have degraded over the period 1957-2015. The data are obtained as a result of comparison of aerial photographs since 1957 and space images of Canopus-B1, Pleiades, GeoEye of different years. The process of degradation of Elbrus glaciation proceeds unevenly in time and space. In the 20th century, periods of retreat and increase of glaciers have been replaced several times. The glaciers of the northeastern foothills of Elbrus considerably decreased in size. The total decrease in the area of glaciers during this time was almost 15%, the position of the snow line on the glaciers changed drastically. When the Elbrus glaciers recede, the directions of the glacial water flow change and new glacial lakes form, the relief changes and the more frequent dangerous hydro meteorological phenomena become more pronounced. Based on the data of weather stations, data are given on the temperature change and some other climatic parameters.

Biography

Mukhtar Yusubovich Bekkiev has worked for a long time at universities and was the Head of the Faculty of Environmental Engineering. He is an expert on the safety of structures. For several years he has been the Director of a High-Mountain Geophysical Institute, Russia. His area of scientific interests is in geography, mechanics, safety of natural objects and structures under various force impacts.

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