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**Record of sediment yield variations during deglaciation in Lake Syltrankel sediments (Elbrus region, Central Caucasus)**

Deglaciation is argued to be a general trend of environmental transformation worldwide and in particular in the high mountains of the Central Caucasus caused by global climate change. The sediment deposits of alpine lakes may be used as a high-resolution environmental archive. The deglaciation history of the alpine Lake Syltrankel catchment (Elbrus region, Central Caucasus) from the end of the XIX century until the end of the XXth century was reconstructed via the examination of sediment deposits and documentary sources.

Visual analysis of the collected sediments provided preliminary information on the stages in the history of the chosen waterbodies. Additionally, under the assumption of annual deposition of laminated sediments (varves), their counts were used to estimate the duration of sedimentation. Modern radioisotope techniques, including the use of natural (210Pbex) and artificial radionuclides fallout (137Cs) and varve-counting allow reliable dating of collected sediment. Mineralogical and geochemical analyses of lake sediments and samples within the catchment provided a information for the identification of sediment sources. The verification of sediment core exploration was possible via the analysis of independent documentary records of deglaciation. In particular, expedition reports, topographic maps, and photographs of the ground, air and space were valuable sources for reconstructing the conditions of glaciers over different time windows.

It was recognized that over the past 140 years, the change in glacial cover has been the main factor in the transformation of sediment yield entering in the Lake Syltrankel. Different stages of sedimentation for the period beginning no earlier than 1881 CE were distinguished. As new catchment areas were released from under the glaciers, the transfer distance, intensity of mechanical sorting and intrabasin accumulation of detrital material increased. The modern stage presumably began in the late 1920s. It is characterized by the consistent accumulation of only fine-grained laminated sediments. At earlier stages, due to the proximity of the glacier edge to the lake, coarse-grained particles could enter the reservoir together with meltwater. The obtained results indicate the potential for studying changes in the sedimentation regime and glacial retreat dynamics.

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