

First geochemical data on lacustrine sediments, Lake Bannoe (Bannoe), Southern Urals

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The work is devoted to the study of the bottom sediments sampled from Lake Bannoe, Southern Urals. The main goal is to identify the geochemical zones in the study area and related climatic periods in the Holocene.

Four core columns, 3.8–5.14 m long, were obtained based on the acoustic data. About 1000 samples were taken in total. All core samples were cut into smaller pieces (2 cm thick) for the laboratory studies. Core column #3 was chosen as the object of this study.

Laboratory studies included: radiocarbon dating, measuring magnetic susceptibility, determining the elemental and mineralogical composition of sediments.

The radiocarbon data showed that the sediments of the Lake Bannoe are about 12,700 years old. Six geochemical zones were identified. These zones were compared with the stratigraphic scale of the Holocene and Pleistocene and the corresponding climatic stages. The lithochemical analysis showed that chemical weathering increased between 12691 and 9963 years (Late Pleistocene), 7908 and 7343 years (Atlantic), 4750 and 3998 years (Subboreal), and decreased between 9963 and 7908 years (Boreal), 7343 and 4750 years (Atlantic), 3998 and 892 years (Subboreal and Subatlantic).

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