

Consideration of paleolake and paleo-inflow in Olgoi basin, upstream of Valley of the Gobi Lakes, Mongolia.

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Valley of the Gobi Lakes is between north Khangai Mountains and south Altai mountains in Bayankhongor Province, Mongolia. There are several closed lakes such as Böön Tsagaan Lake, Tsagaan Lake and Orog Lake in the valley. Previous geological studies indicated that there was once a large lake, but the geological history of this area has been still unclear. This study focuses on the basin including present Olgoi Lake upstream of Böön Tsagaan Lake flows. We found paleo shorelines in the east of the basin through a satellite image, and reconstructed Olgoi Paleolake, which was 70 times larger and 15 m deeper than present Olgoi Lake. We also numerically simulated the paleo-inflow with criteria regarding the shear stress necessary to transport the gravels measured in the field research. The calculation suggested two orders of magnitude larger discharge than the bankful discharge in the modern period estimated based on the present topography. Although this flow does not seem to occur under present precipitation there, this region should have experienced much wetter environment in the past whether the stream was caused by precipitation or melting of snow and/or glaciers.

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