

## Paleo Lake level change in southern part of Mongolia

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Lake Boontsagaan, Orog and Olgoy are located in the Valley of the Lakes, Gobi-Altai transition zone, which stretches from central to western Mongolia. This area suffers desertification probably due to the ongoing global warming and dried up lake sediments are worried as a source of contaminated sand storm. The flat surface in Valley of Lakes is covered with Quaternary lake sediments. Paleoshorelines are identified near the lakes. This study observed the sedimentary structures of the outcrops on the paleoshoreline and samples were collected to estimate the time when lake level was high by Quartz OSL dating method. The outcrop near the Ology, Boontsagaan, and Orog lakes are higher than the present lake level by 8 m, 15 m and 3 m, respectively.

The history of lake level change is proposed based on the age, altitude of the localities, and sedimentary structure of the outcrops. Data from Boontsagaan lake, for which coarse grains were analysed, scatter, therefore the youngest age component is extracted by plotting the data on the radial plot (Galbraith, 1988, Vermeesch, 2009). Ages from Boontsagaan Lake are around ~4-9 ka, while ages from Olgoy and Orog lakes are around ~1-2 ka. Because Boontsagaan Lake is larger and deeper than other lakes, its lake level change would be less active. Besides, relative height of the locality to the current lake level is higher than other two lakes. Therefore, the lake level was very high before ~5 ka, and relatively high at ~1-2 ka. The obtained results are consistent with previously reported data from the nearby sites (Lehmkuhl et al., 2018).

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