

## Distribution, ages, and deformation of the Holocene dammed-up-lake sediments along the Ane River, central Japan

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The middle reaches of the Ane River, Shiga Prefecture, central Japan, are known to have been dammed by large-scale slope failure of Mt. Ibukiyama at least twice in the geologic past. Older and younger dammed-up lakes reportedly existed 30-40 ka and ~5 ka, respectively, but precise ages and triggers of their formation and disappearance have been poorly known. Our short drilling at two sites on the modern riverbed of the Ane river recovered the lowermost part of the younger dammed-up lake sediment down to a depth of ~4.0 m and ~6.8 m from the riverbed. Base on radiocarbon ages of leafs and fragile plant fragments from the sediment cores as well as those from outcrops nearby, the younger dammed-up lake is most likely to have been formed ~5.5 ka. The age of disappearance, however, is poorly constrained because the upper part of the lacustrine sediment has been mostly eroded away. On the basis of the radiocarbon dates obtained so far, the younger dammed-up lake is inferred to have existed at least until ~4.5 ka, indicating that the lake retained for at least 1000 years. The long lake life is probably the result of very large volume of the landslide body that blocked the river, but the material of the body might be another reason for its long life: limestone gravels that lithify very quickly. We also found that the younger dammed-up-lake sediments have tilted up to as large as ~20 degrees with small displacements at some places. Although the tilt may be partially ascribed to differential sediment compaction, we infer that active faulting has some relation to those deformations, given that the area is located in a compressional stepover between two active left-lateral faults: the Kajiya and Sekigahara faults.

Keywords: Ane River, large-scale slope failure, dammed-up lake, active fault, compaction