

## The environmental change from lagoon sediment along Nakai Trough in Japan during the past 2000 years.

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The lagoon sediment offers critical information for sea level change because lagoon reacts sensitively with a small fluctuation of sea level. In other words, the environment change in lagoon depends on sea level fluctuation. The sediment in the lagoon in Japan was continuously deposited and offer high-resolution results such as paleoclimate change and sea level change. The environmental change was reconstructed from three lakes, Lake Hamana, Lake Kawahara, Lake Ryuuoo, based on diatom assemblage. The 16Hm-1C core was taken from Lake Hamana. The environment is divided based on diatom assemblage. Zone 1 is dominant by *Cyclotella atomus* and *C. atomus var. gracilis*. It is suggested that the lake was a hypersaline lake. Then the lake was changed to Oligohaline lake in AD 200. Zone 3 and Zone 4 were dominant with freshwater species. Around mid of 14<sup>th</sup> century, the lake was changed to the brackish lagoon as consequences of creating inlet and paleoriver activity. KAW2 core was from Lake Kawahara. Zone1 was typical lagoon which is affected by sea water. After around AD 550, the lagoon changed to the brackish lagoon. Freshwater species in AD 1100 dominated the lake. The RYU core got taken from Lake Ryuuoo. The environmental changed from brackish lagoon to freshwater lake in AD 600. The environmental change happened at the same time in 3 lakes. The coastal deformation resulted in change RSL (relative sea level) and environmental change in lakes.

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