

Temperature change in western and northern Japan during the last 3,000 years and the related human activity

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Marine coastal sediments provide a big advantage to have continuous record of both marine and terrestrial environments in their sedimentary sequence. In addition, high correlation between atmospheric and sea surface temperature in bays present very unique opportunity to reconstruct terrestrial temperature quantitatively.

We measured organic material of alkenone to reconstruct with high time resolution of temperature in marine and adjacent terrestrial environments, to evaluate the process behind long and short-term trend of temperature for the last 3000 years, and to understand the relationship between climatic changes and the human activity.

This time the results at Core St. 5 collected in Uchiura Bay showed that warm periods were 500 - 300AD, 100BC - 50AD, 670 - 900AD and 1900 - 2000AD and that cold periods were 1000 - 940BC, 800 - 700BC, around 200BC, 150 - 250AD, 560 - 620AD, 990 - 1150AD, 1750 - 1900AD. The combination of reconstructed temperature at northern and western Japan reconfirmed the concept that Cold periods appeared to coincide with major shifts in social systems in Japan.

Keywords: temperature, Climate, Japanese society