

Radiocarbon ages of tsunami deposits from the Lake Harutori in Kushiro City along the Pacific coast of eastern Hokkaido, northeastern Japan

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To estimate the sedimentary process of chronological samples in tsunami deposits, the radiocarbon ages of 10 pairs of marine shells and terrestrial plants were measured from one core obtained of lagoon lake sediments from the Lake Harutori in Kushiro City, eastern Hokkaido. This core of 12.6 meters length was obtained in the central part of the frozen lake in winter, which locates on a tectonic active region in the southwestern Kuril arc. Based on analyses of lithology, molluscan assemblages, and radiocarbon dating, we interpreted three units in order of decreasing age: transgressive tidal flat, transgressive lagoon, deltaic lagoon sediments. The lagoon sediments consisted thin silt layers of varve with terrestrial plant fragments and intercalating some event deposits by 22 sand layers of tsunamis and 6 volcanic ashes (Nanayama et al., 2003, Soeda and Nanayama, 2005). This structure was imaged by a core scanning of a computed tomography (CT) and X-ray fluorescence (ITRAX). The radiocarbon ages from the tsunami deposits were more than 1000-4000 years older than the depositional curve constructed by previous radiocarbon ages and tephrochronology. It clearly suggests that these materials were reworked from older sediments by catastrophic tsunamis. This effect was remarkable on plant samples. The core scanning of CT and ITRAX was performed under the cooperative research program of Center for Advanced Marine Core Research, Kochi University (Accept No. 18B061). This work was supported by KAKENHI Grant-in-Aid for Scientific Research number JP18H01310 and JP 18K03767.

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