

Holocene alternated auto-allochthonous oyster beds in Pashukuru-numa Lake, Hokkaido: tsunami deposits during 8-6.6ka ?

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Pashukuru-numa Lake located in Shiranuka Town, about 30km west of Kushiro City, east Hokkaido, is a small lagoon closed by sand bar from the Pacific southward, which was a small inner bayment during the Holocene transgression. The Holocene oyster shell beds along the inner side of east coast nearby a tidal inlet of the lake are known to be exposed during ebb of spring tide, as reported by Matsushima (1982). During the trench survey last summer of the Holocene deposits about 3.5 meter thick along east lake coast, we found the four alternating beds of allochthonous and autochthonous oyster shell concentrations with a total thickness of 2 meters in the lower half of the Holocene. We briefly describe the taphonomic characteristics of oyster shell beds such as lithostratigraphy, mode of shell occurrence and species composition of molluscs. We also performed radiocarbon dating for shell and wood materials from seven horizons. Four carbon-14 ages of an intertidal species (*Trapezium liratum*) from four horizons of two-meter thick shell beds ranges about 8,000 to 6,600 cal. BP. These lines of evidence suggest their formative processes possibly as a few times repetitions of tsunami events for allochthonous layers and inter-tsunami intervals for allochthonous layers forming small oyster colonies or reef. Taking three thin sand layers intercalated within modern peat sediments overlying the oyster bearing mud, which were inferred to be tsunami up-flow deposits during 13th century to 1843 by Nanayama et al. (2001), into account, their oyster shell beds seem to have been formed during 1,400 years from 8,000 to 6,600 cal. BP. under the influence of a few times tsunami events occurred at intervals of a few hundreds years.

Besides the Holocene oyster beds in Pashukuru-numa Lake, several oyster shell beds with alternating allochthonous and autochthonous characteristics are recognized from the Cretaceous to Recent in many places in Japan, we will be able to detect the records of tsunami-related sedimentary events during geologic time.

Keywords: Holocene, *Crassostrea*, shell beds, tsunami deposits, Pashukuru-numa Lake, Hokkaido