

## 17th century tsunami deposits in Tomakomai area, southwest Hokkaido, Japan

# Jun Nagai[1]; Yasuhiro Takashimizu[2]; Yuichi Nishimura[3]; Tsumoru Sagayama[4]; Satoshi Okamura[1]

[1] Sapporo, Hokkaido Univ. Educ; [2] Dep. Env. Geol., Geol. Sur. Hokkaido; [3] Inst. Seismology and Volcanology, Hokkaido Univ.; [4] Marine Geosci., Geol. Surv. Hokkaido

Along the eastern Pacific Ocean coast of Hokkaido, earthquakes and tsunamis derived from a subduction of the Pacific plate take place frequently. The latest giant earthquakes and the associated tsunami deposits occurred along the coast in the 17th century. On the other hand, the tsunami deposits by summit collapse of A.D. 1640 eruption of the Hokkaido-Komagatake volcano were also discovered (Nishimura and Miyaji, 1995). We examined the tsunami deposits distributed around the Tomakomai east port, and identified the deposits as the 17th century tsunami deposits.

The sandy layers in peat are distributed along the vicinity of the Tomakomai east port and were confirmed at least 5.5 km in width along the coast and 1.5 km extension inland. The pumice fall deposit, Us-b (1663 tephra) covering the layer with thin humus at the top, indicates the deposition occurred in a short time before 1663. The thickness of the deposit decreases from 18 cm in seaward to 0.4 cm near pinching out in inland. The maximum accumulating height is 2.17 m above the sea level. The grain size distributions of the deposit are medium-grained sand in seaward side and very fine-grained sand in inland side, and the sorting becomes better from seaward to inland side. The diatom assemblage yielded from the deposit includes marine species up to 10 %.

We examined the sedimentary structure and the grain size distribution in digging trench 120 m inland from the shore. The deposit consists of four sedimentary units, of which two units show normal grading. Grain size distribution of the sediments is characterized by two dominant modes. The coarse sand peak is generally indistinguishable from sand dune with 0.3-0.8 phi mode, and the fine sand shows 2.5 phi mode similar to finer part of foreshore sand. The grain fabric of the deposits shows that all units are characterized by the run up flow deposits. Paleo-current analysis of almost units shows N50-80E direction, which suggests the tsunami deposits may have been derived from the southwestern side.