Recurrence of Kanto Earthquakes Revealed from Tsunami Deposits in Miura Peninsula

KUNIHIKO SHIMAZAKI[1,2], KENJI SATAKE[1], HAENG YOONG KIM[1], TAKEO ISHIBE[1] and TAKASHI CHIBA[3]

[1] *Eartquake Research Institute, University of Tokyo*
[2] *Association for Earthquake Disaster Prevention*
[3] *Graduate School of Frontier Sciences, University of Tokyo*

Along the Sagami trough south of Tokyo, subduction of the Philippine Sea plate causes great (M~8) Kanto earthquakes. The most recent one in 1923 (the Taisho earthquake) caused more than 100,000 casualties and coastal uplift of Miura Peninsula. The penultimate earthquake in 1703 caused similar uplift and tsunami in Miura Peninsula. In order to study recurrence history of the Kanto earthquakes, we carried out coastal paleoseismological surveys in two small estuaries, Koajiro-bay and Ena-bay, in southern Miura Peninsula. By using 3-m-long Geosciler, at least three layers of coarse sediments, composed of mixture of shell fragments, gravels and coarse sand, were identified in the inner bay fine sediments. Some of these units eroded the lower fine sediments. These units are interpreted as tsunami deposits. The tsunami deposit in Koajiro bay were correlated to the 1923, 1703 and 1293 Kanto earthquakes. In Ena bay, while the top tsunami layer was correlated to the 1923 event, the second through fourth ones are dated at around 3000, 3300 and 3700 years ago. The age difference in 20-50 cm between the topmost and second units is about 3000 years, indicating a significant decrease of deposition rate or an unconformity.

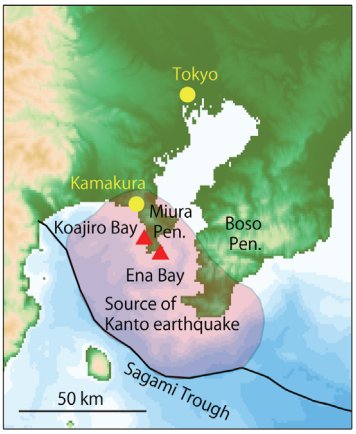

Figure 1. Source area of the Kanto earthquake and the locations of paleoseismological survey sites.

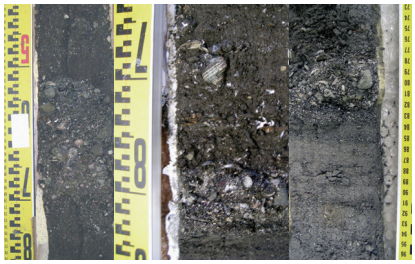

Figure 2. Examples of tsunami deposits in Geoslicer samples.