

CNS elemental analysis of tidal flat sediments in Ena Bay, Miura Peninsula

*yamamoto yuka¹, Akihisa Kitamura¹, Kazuyoshi Yamada²

1. Shizuoka University, 2. Museum of Natural and Environmental history, Shizuoka

The ratio of total sulfur (TS) to total organic carbon (TOC) (C/S ratio) and concentration of TS have been used to identify whether sediment deposited under freshwater or brackish water or sea water. For example, Berner & Raiswell (1984) reported that the C/S ratio of marine sediment is 0.5-5 (the average is 2.8 ± 1.5), and freshwater sediment is >10 , for sediment containing $>1\%$ TOC. Terashima et al. (1983) analyzed sediments of freshwater lakes, brackish water lakes and deep sea at and around Japan. The results showed that C/S ratio of marine sediments and freshwater sediments are >6 and >9 , respectively. They also suggested that TS in freshwater sediments is usually low, but that the ratio of Lake Suwa (0.09 %) is similar to those of deposits of Obama (0.07 %) and Suruga (0.09 %) bays. More recently, Sheng et al. (2015) investigated Laizhou Bay in China, where the mean C/S ratios were 55.91 in marine sediment and 35.08 in river sediment, respectively. TS in marine sediment were 0.01-0.09 % and the average is 0.03 %. TS in river sediment were 0.42 %, and were anthropogenically-derived. Since C/S ratio and TS vary considerably from region, it is necessary to construct a determination indicator for the research area. This study reports CNS elemental analysis of tidal flat sediments in Ena Bay, Miura Peninsula, Kanagawa Prefecture, central Japan to establish the criteria for applying Holocene alluvial lowland around Shizuoka Prefecture.

Keywords: CNS elemental analysis, tidal flat sediments