

Relationship between Holocene sequence of the Tsuya plain and subsidence trend along the southern Sanriku coast, northeast Japan

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The Sanriku coast has some small alluvial plains at environments of rias coast. Although lithofacies of the incised valley fills is reported in some alluvial plains in the Sanriku area, formation process of the valley fills had not been discussed on the basis of many radiocarbon ages in the previous studies since 1980's. Knowledge of incised valley fills with many radiocarbon ages can be basic and important data for not only understanding of formation process of alluvial plain but also clarification of tectonic history in this area. A sediment core, TY1, was acquired from lower reach of the Tsuya Plain, northeast Japan. Core sediments show shallow marine succession influenced by the Holocene sea-level change. On the basis of twelve radiocarbon ages, accumulation rate is high (> 10 mm/yr) at 9,000 to 7,100 cal BP, low (ca. 0.5 mm/yr) at 7,100 to 2,800 cal BP, and high (3 -5 mm/yr) after 2,800 cal BP. High accumulation rate at early to middle Holocene indicates sedimentation from seaward area during the term of marine transgression. In the regressive phase since the middle Holocene, low accumulation rate in the deltafront deposits and high accumulation rate in the delta plain deposits shows most of sediments are deposited in delta plain area, indicating continuous rising trend of relative sea-level (RSL) during the Holocene. This suggested rising trend of RSL is consistent with previously reported Holocene subsidence in the southern Sanriku coast.

Keywords: Sanriku coast, Tsuya plain, Holocene sequence, radiocarbon dating, subsidence