

APE031-19

Room:104

Time:May 26 09:00-09:15

## Holocene paleoenvironmental changes of the marine - terrestrial interface area in western Izumo Plain, western Japan

Yuko Okazaki<sup>1\*</sup>, Koji Seto<sup>2</sup>, Hiroyuki Takata<sup>2</sup>, Tetuya Sakai<sup>1</sup>, ayaka Ooki<sup>1</sup>, kazuyoshi yamada<sup>3</sup>, Hiroo Nasu<sup>4</sup>, Masami Watanabe<sup>5</sup>

<sup>1</sup>Geosci. Shimane Univ., <sup>2</sup>ReCCLE, Shimane Univ., <sup>3</sup>Naruto University of Education, <sup>4</sup>The Graduate Univ for Advanced Studies, <sup>5</sup>Archaeological Research Consultant, Inc.

Izumo Plain was formed by the aggradations with sediment supply of from the Hii and Kando Rivers. The history of development of Izumo Plain has been reported by a lot of previous studies. The purpose of this study is to clarify the environmental history with high-resolution analyses in marine - terrestrial interface area, western Izumo Plain. For this purpose, INB core was obtained by mechanical boring system. The total length of INB core is 19.17m, and divided by seven units.

Gravel Unit (19.17-18.89m in depth) is mainly characterized by gravel supported texture containing rounded to sub-rounded gravel (about 1cm), and it seems alluvium base deposit. Greenish Gray Sandy Silt Unit (18.89-15.94m in depth) mainly composes of silt to very fine sand. Total organic carbon (TOC), total nitrogen (TN) and total sulfur (TS) contents show the low value (<0.1%). This suggests fresh-water environment where a lot of inorganic materials were supplied from river. Organic Silt Unit (15.94-10.53m in depth) is mainly olive black massive silt, occasionally with obscure lamination. *Haplophragmoides canariensis* (foraminifera) and *Ruppia maritima* (plant seed) occurred in the upper part of this unit. The volcanic ash layers are observed around 11m in depth, and may be identified with the Shigaku Ash Fall Deposit, based on AMS <sup>14</sup>C age. In this unit, TOC content shows the increasing trend from the lower (about 0%) to upper part (about 5%), TOC/TN ratio shows relatively high value (about 15) and TOC/TS ratio shows relatively low value (about 2). These features suggest that this unit was formed under brackish-water environment with the reduced condition that the terrestrial higher plant materials were supplied. Tuffaceous Sand Unit (10.53-3.67m in depth) composes of fine to very coarse sand with many pumice. Deposits of this unit may be derived from the Taiheizan Pyroclastic Deposit (about 3700 yrs BP). Sandy silt Unit (3.67-1.50m) composes of fine sand to silt with lamination (partly cross-lamina). TOC content shows relatively high value (0.5-4.3%) whereas TS content shows low value (<0.1%). TOC/TN ratio is relatively high value (17-30). These evidences suggest that this unit deposited under fresh-water environment that the terrestrial higher plant materials were supplied. Cultivation Soil Unit (1.50-1.07m in depth) composes of organic-rich mud with sand, and contains plant seeds that indicate paddy field (e.g., *Oryza sativa* and *Schoenoplectus sp.*).

Previous paleoenvironmental studies of boring cores in the Izumo Plain have reported the horizon around K-Ah tephra indicate marine environment containing echinoid fossil. However, the same horizon of INB core was likely to indicate brackish-water environment that the terrestrial higher plant materials were supplied. It is suggested that this core site was located close to the estuary of the Kando River. For this reason, we will be able to discuss both the influences of marine and river systems during mid-Holocene.

Keywords: Izumo Plain, stratigraphy, Holocene, Total organic carbon content, paleoenvironment