

# Environmental change history near the river mouth of Hii river based on grain size profile of the sediment of Lake Shinji.

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Lake Shinji is located to the west of Matsue City, Shimane Prefecture, Japan. This lake is now under brackish environment and has the length about 6km in north-south direction, and about 17km in east-west direction and has an area about 79.2 square meter.

Cores GS-3 and GS-4 were obtained by Geoslicer at seven hundred meters from western coast of Lake Shinji (the mouth of Hii river), where sand is supplied from Hii river. The length of GS-3 is 800cm and GS-4 is 650cm. It is expected that the sediments of GS-3 and GS-4 reflect events of the Hii river basin, for example, Kanna-nagashi iron sand mining, floods of the Hii river and eastward progress of Izumo Plain etc.

Based on grain size profile sedimentary facies are divided into five units. The grain size of Unit I is relatively coarse about  $Md_{phi}2$  to 3. Grain size grades downward from Unit II to Unit I. It means the sediment is topset sediment of the Hii river delta.

Grain size of Unit II is about  $Md_{phi}5$  to 6. Grain size in Unit II-a is almost stable. It is supposed to be sediment supplied from Sinkawa river that had been used as a channel for about one hundred and years from 1831 to 1940 AD. Sediment of Unit II is considered to be foreset bed.

Grain size of Unit III is relatively fine about  $Md_{phi}8$ . The change of grain size in Unit III-a is more sharp than that of Unit III-b because of flood sediment.

In conclusion, GS-3 and GS-4 are the sediments that accumulated after eastward of the Hii river. The sedimentary environment of Unit III is bottomset bed.