

Characteristics of Tsunami origin sediment at Onagawa Bay, Miyagi Pref.

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By the Tohoku Region Pacific Coast Earthquake generated on March 11, 2011, a tsunami occurred in the wide range of the Pacific coast and was able to bring serious damage. Tokai Univ. carries out general marine geological investigation for the purpose of the debris mapping at a part of TEAMS around the Iwate area with JAMSTEC. From 2014, we started an investigation to clarify bottom of the sea environment including debris mapping and the surface sediment in Gulf of Onagawa.

Gulf of Onagawa is the typical rias type gulf that opened in the east Pacific among Oshika Peninsula existing to the south and Izushima located to the north. It is only Onagawa River to pour into the Onagawa, and there are few sediment supplies from the river. In the Onagawa bay area, the sandy beach does not exist except East Side Coast area from the Gobuura-bay, and most are reef level. It is pointed out that the quality of sea-bottom environment of the Gulf of Onagawa became the nature of the mud superiority by a tsunami more. The characteristic of this change is totally different from the characteristic (sandy sediment covers the sea-bottom in many gulfs) of the Sanriku Coast area that Tokai University clarified until now.

We succeeded in gathering three columnar geological samples from depth of the water 17m to 24m in Gobuura-bay. As a result of columnar sample (15ONV2-2, 23m in WD) observation, fine sand to silt sediment layer (U-1) observed the top (0-10cm) where the coarse sand layer developed in the bottom, and silt sediment (U-2) with many shell fragment was confirmed in lower part of columnar section (10-120cm). The coarse sediment is not confirmed in the U-1 layer in other columnar samples(15ONV1,15ONV3), and the grain size does not change with the U-1 layer and the U-2 layer. In the Gulf of Onagawa with a little sabulosity sediment, sea-bottom mud sediment is stirred by a tsunami activity, and is estimated that the muddy sediment deposit on the sea-bottom surface again. The small amount of sand sediment that observed the bottom of U-1 layer from 15ONV2-2 is derived from the beach around the Gobuura-bay.

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