

## Distribution of Geoplogical Disaster by Liquefaction-Fluidization Phenomena on Boso peninsula at The-2011 off the Pacific

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Liquefaction-fluidization phenomena were occurred by the 2011 off the Pacific coast of Tohoku Earthquake in Tokyo Bay reclaimed land area. Tone River lowland area and Kujukuri plain in Chiba prefecture. In Tone River lowland, liquefaction-fluidization disaster distributed on man-made strata. In the lower Tone River Plain, some marshes and lakes were reclaimed for paddy fields. Other ponds and lakes resulted from river improvement work were filled by riverbed fine grained sand for paddy fields and houses. Liquefaction-fluidization disaster are more serious and widely at this earthquake than at 1987 off Chiba prefecture earthquake. Seriousness of damage by liquefaction-fluidization is different in reclaimed land. It is supposed that the reason of the difference is the difference of the man-made strata and the Holocene deposits. The ground wave "Jinami" were found in some areas.

Kujukuri Plain characterized over ten of sand dunes are distributed in Kujukuri Plain. Marshes and ponds distributed between the dune lines were filled by fine grained sand of dune sand and the Shimosa Group collecting for houses lots. Along the coast, sand dune was dug for iron sand. Then the sites were filled up again by the iron removed sand. In past this area suffered the liquefaction-fluidization hazards caused by earthquake at December 17, 1987. These artificial beds also liquefied by the 1987 East Off Chiba Prefecture Earthquake (Nirei, et al., 1990). The hazards were more extensive than that of the past same scale earthquakes (Nirei, et al., 1990). The liquefaction-fluidization hazards caused by the 2011 off the Pacific coast of Tohoku Earthquake, on the northern part of Kujukuri plain seen more widely and seriously than the 1987 East Off Chiba Prefecture Earthquake. But the phenomena could not be observed in the southern part of Togane city.

In Asahi city, located in the northern part of Kujukuri plain, the liquefaction-fluidization phenomena occurred more extensively than the 1987 East Off Chiba Prefecture Earthquake. Also the liquefaction-fluidization hazards were more serious. But the degree of damage varies by location. It is considered the impact of the differences in the thickness of the soft sand. Along the coast, sand dune was dug for iron sand. Then the sites were filled up again by the iron removed sand from many local residents -there was testimony that the liquefaction-fluidization hazards occurred. At Komatsu/Hasunuma-Hira, Sanmu city, located near the Kido-gawa river mouth, the severe liquefaction-fluidization hazards occurred. It is considered the impact of the differences in the thickness of the Holocene sediments and to configure the type of strata.

Keywords: Liquefaction-Fluidization, Tone River, 2011 off the Pacific coast of Tohoku Earthquake, 1987 off Chiba prefecture Earthquake, digging of iron sand ore deposit, Kujukuri plain