



The evidence of coastal flooding within the coastal deposits in Yeonggwang, Korea (Yellow sea).

Won Jeong Shin (1), Jong Yeon Kim (2), and Dong Yoon Yang (3)

(1) Seoul National university, Department of Geography Education, Korea, Republic of (tlsdnjswjd@snu.ac.kr), (2) Chungbuk National University, Department of Geography Education, Korea, Republic of (terraic@cbnu.ac.kr), (3) Quaternary Geology Department, Korea Institute of Geoscience and Mineral Resources, Korea, Republic of (ydy@kigam.re.kr)

To prevention of coastal risk of the west coast of Korean peninsula, Korean government funded the research activities to find the evidence of coastal flooding which records found from the historical documents. Although there are many evidences of historical documents on the coastal floods in the Yeonggwang, no empirical studies have been conducted on them. We investigated the characteristics of sand sediment topography in the Yeonggwang coastal area to collect evidence of the paleo-environmental change and coastal flooding. Yeonggwang is located in the southwestern part of the Yellow sea coastline.

Top surface of the coastal area of Yeonggwang is mainly covered by the aeolian sand, so it can be the part of coastal sand dune field. Below the aeolian sand deposit maximum 2m thick, the shell layer upto 0.5m thick has been buried. Part of the shell layer (about 10m from msl) found from the foot-slope of sand dune. We performed analysis on particle characteristics, chemical composition, and the age of deposition of sediments. The sand deposit of Yeonggwang comprise moderately well sorted medium and fine sand (1.00~2.19 ϕ). Various sedimentary structures formed by non-aeolian transport processes are observed. It also found that the disturbance structures, which are forms during abrupt inundation of sedimentary layers. Geochemical characteristics change by depth and the degree of variation with depth is small. The results obtained from OSL dating show that sand layers below shell units are deposited 0.32-0.43 ka. As the elevation of the shell unit far mean high water levels or highest high water level, the extensive shell layers could only have been deposited during storm surge conditions. Aeolian processes are not considered as major processes because of the size of clasts and the location at which they occur. Results of age dating of the surrounding deposits indicate shell deposits formed after around 300 years age. There is a distinct difference between sedimentary layers including dark brown-black layer. The sedimentary characters such as particle size and geochemistry show difference with depth. It is presumed that depositional environmental in coastal Yeonggwang has changed several times before.