

Seasonal Variation Of Contaminated Geo-Environmental Condition Of Yamaguchi Bay Tidal Flat, Japan

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ABSTRACT

In this study, the seasonal variation of geo-environmental condition of Yamaguchi Bay tidal flat has been studied. Yamaguchi bay is located at the south part of Yamaguchi prefecture and was famous for its different kind of shells and other living creatures. However, a sharp declination of a catch of shells and crabs have been observed in recent years. Particularly, the living creatures related to the tidal flat mud have been suffered a damage. Recently, the horseshoe crabs which used to come onto shore to mate is declining in Yamaguchi bay which is not good for the marine ecosystem of this area. The mud samples were collected from the tidal flat area once in every month by using the tube sampler. Then the samples were cut into specified layer and measured the different geo-environmental parameters (acid volatile sulfide, pH, loss on ignition, COD, Electrical conductivity) at the laboratory in each layer. It was observed that the acid volatile sulfide (AVS) which is the most important parameter for the living condition of the living creatures is over the safe limit (0.2 mg/g-dry mud) during the summer. The other parameters such as pH, LOI, have also significant variation in different seasons but they were still within the safe limit. The COD value of the tidal mud also showed a significant variation during the summer and the winter. However, the higher AVS value was one of the reasons for the declination of horseshoe crabs and other living creature in the tidal flat of Yamaguchi bay, Japan.

Keywords: Geo-environment; Yamaguchi bay; Horseshoe crab; Acid volatile sulfide; COD

DOI: [10.1016/j.rsma.2017.01.002](https://doi.org/10.1016/j.rsma.2017.01.002)