

Environmental Investigation in Yura Area of Awaji Island

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It is well known that Osaka Bay is a typical closed sea in Japan, of which the mouths are just at Akashi, and also at Kii Channel. There are several rivers around the west coast of the Bay. The largest one is a famous Yodo, which flows a large amount of fresh water into Osaka Bay. This means that the effect of the load from land owing to various human activities is very strong around the west coast. There is weak current due to gravity, wind and also tide in this area. Furthermore, since the depth of the west half of the bay is around 20m or less, the elution from the bottom base makes the water rich. In order to investigate the environment of this kind of the area, the development of a synthetic model, which includes not only the ecosystem of sea but also load from land owing to human life and activities, is very important.

As a first step of the research, the authors present the result of data analysis using a number of data, which have been investigated by the Osaka-Prefectural Fisheries Experimental Station for long years. Not only temporal but also spatial characteristics of the environments of Osaka Bay are clarified here by principal analysis technique. The results show that it possible to make zones the sea area corresponding to the environmental characteristics. It is very important for the modeling.

The authors have been investigating the environments in Yura area of Awaji Island for these 6 years, where is the southern mouth of Osaka Bay. The analyzed results show the characteristics of this area clearly. A simulation model using the ecosystem of the sea and also the so-called tank model for the pollution load from land is developed. The effectiveness and problems are discussed for the future works.