

Species Composition and Seasonal Change of Phytoplankton in Yatsu Tidal Flat Locating in Tokyo Inner Bay

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This study was conducted to obtain the information about the quality and the quantity of phytoplankton in an enclosed tidal flat, called Yatsu Tidal Flat, located in Tokyo Inner Bay and to assess the environmental condition by analysis of the seasonal change of phytoplanktonic flora. This tidal flat has been registered under Wildlife Protection Area of Japan in 1988 and Ramsar Convention in 1993, and just as the tidal flat that was left from reclamation of waterfront zone of urban area. It is very important to obtain some information about these ecosystem characteristics of such nature left in urban area, because creation of artificial tidal flat is recognized as one of important enterprises to construct urban ecosystem.

It is generally said that water quality analysis shows only a cross section of environment, but biotic analysis indicates results of long-term environmental change. In other words, biotic indicators such as phytoplankton, macrobenthos, water glass, and so on, are considered to be reflecting the environmental condition all-inclusively. Environmental assessment by biotic indicator is very qualitative but not quantitative. But it is able to obtain environmental information on the average in the long past period.

As results obtained from this research, 1) As quality of phytoplanktonic flora, seasonal change of species composition of phytoplankton is not so large and its species number was 50-60 species through a year, 2) As quality of phytoplanktonic flora, individual numbers of phytoplankton was larger in summer and smaller in winter, and supplied from Tokyo Inner Bay to Yatsu Tidal Flat throughout two channels, called Yatsu river in the eastern side and Takase river in the western side, with the ebb and flow of the bay, 3) The diversity index, calculated by Shannon Index, of phytoplankton is larger in winter and smaller in summer, and the possibility of simplification of phytoplanktonic flora was occurred by outflow from Yatsu Tidal Flat to Tokyo Inner Bay, 4) Unique ecosystem has been constructed in this enclosed tidal flat because of its closure circumstance which greatly influencing to phytoplanktonic flora, were made clear.