

Dynamics of nutrients and fishery production in the Seto Inland Sea, Japan

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Regulation of the land loads has been made for the Seto Inland Sea as well as for Tokyo Bay and Ise Bay, on total phosphorus (TP) and total nitrogen (TN) as well as chemical oxygen demand (COD) which indicates amount of organic matter. In these area, the concentrations of TP and TN were clearly decreased.

However, in the area of the Seto Inland Sea other than Osaka Bay, fisheries production has been decreased with regulation of those material loads. For example, Nori cannot be grown in offshore area any more, and filter feeders such as bivalves are drastically decreasing.

In this paper, I would like to clarify what are the mechanisms and processes underlying oligotrophication process. We are familiar to the processes of eutrophication, but not to oligotrophication. The approaches I introduce are Lotka-Vortella Model and calculation of Ecosystem Metabolisms.

The Japanese Government has now understood about the oligotrophication processes. However, the decline of fish stock cannot be fully explained by only oligotrophication. Several causes other than oligotrophication could have affected on the deterioration of environmental conditions.

Anyway, the most important is to construct a simulation model in which both pelagic and benthic processed included, and improve the accuracy and precision in the next step.