

微生物食物網を含んだ生態系モデルによる伊勢湾の解析

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Abstract

In order to investigate the possibility of seasonal succession between a grazing food web and a micro-bial food web, and seasonal variation of the dominant species of phytoplankton, a lower-trophic marine ecosystem model has been developed. The prey-predator interactions and the interspecies competition were incorporated into this model. This improved model was applied to Ise Bay for 1995 by coupling with a 3-D hydrodynamic model.

In a physical model, the turbulent heat transfer process between sea surface and atmosphere was modified to more realistic formulation, which resulted in better agreement with the observed data.

The simulated results of biological processes using a lower-trophic marine ecosystem model showed that a simulated chlorophyll-a variation was reproduced well, and that the dominant plankton species is diatoms through the simulated year. Simulated ANF and bacteria biomasses were compared favorably with the field measurements. But in terms of HNF and picophytoplankton, the simulated results showed some discrepancies.