Abstract

We have developed a bioaccumulation model to predict the levels of hazardous chemicals in a food chain of Tokyo Bay. The model, called the AIST-Bioaccumulation Model for *Conger myriaster* in Tokyo Bay, has four compartments: phytoplankton, zooplankton, small fish and the conger eel (*Conger myriaster*), which was set as the top predator in this food chain.

The chemical Coplaner Poly Chlorinated Biphenyl (Co-PCB) is a persistent organic pollutant that bioaccumulates in the natural environment and is highly toxic to humans. In this study, we modelled the accumulation of Co-PCB in Conger myriaster using the environmental concentrations of Co-PCB from existing data of 2004 collected in Tokyo Bay in 2004, and estimated the temporal variation in the concentration of Co-PCB in Conger myriaster over five years at a stationary field in Tokyo Bay.

The Co-PCB concentrations in *Conger myriaster* predicted by the model were the same as the levels recorded in water samples collected in July 2008. This suggests that this model simulates bioaccumulation of this chemical with great accuracy.