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福嶋　悟：都市河川の珪藻群集における季節性の再生

Satoshi Fukushima : Recovery of seasonality on periphytic diatom assemblages in urban rivers

Abstract

This study examined the relationship between the change of water temperature and the distribution of cold-water diatom species. This study uses data from 1973 to 2002 of the auto measurement system at continuous monitoring sites and the studies of periphytic algal assemblages in the urban rivers in long-term monitoring of aquatic organisms. In the rivers receiving sewage effluent, water temperatures have risen markedly since the mid-1980s at the downstream sites of the sewage discharge points. These environments contained few cold-water diatoms. Recently, in the rivers without a sewage treatment plant in the basin area and upstream part of the sewage discharge points, the water temperature has tended to drop. In these environments, cold-water diatom species were observed in each study after the average water temperature in winter had dropped below 10℃ over 4-5 years. Nevertheless, the relative abundance of these species in the periphytic diatom assemblage was low. These phenomena indicate the start of the recovery of seasonality.

Key index words : cold-water diatom, long-term monitoring, sewage effluent, urban river, water temperature