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EFFECT OF ENVIRONMENTAL VARIABLES ON DIATOMS ASSEMBLAGES IN AKKESHI-KO ESTUARY

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ABSTRACT: A study of the environmental effect on the diatoms assemblages was undertaken from March to December 2003 in Akkeshi-ko estuary, eastern part of Hokkaido-Japan. The dynamic of diatoms assemblages depends upon environmental variables such as physical and chemical factors. While any environmental parameter that mediates the diatoms assemblages can have an important influence on the distribution space presented in the Akkeshi-ko estuary. There are positive correlations between pelagic diatoms in water column (PDWC) and depth and salinity. Correlations between benthic diatom assemblages in sediment (BDSed) and in water column (BDWC) and depth and salinity were not significant. Ammonia and nitrite + nitrate had a positive relationship with the abundance of diatom in water column and on the surface sediment. Phosphate concentration showed opposite trends in relation to the abundance of benthic diatoms. Season and stations of sampling can occupy wide ranges of environmental conditions, and in certain cases, spatial and temporal variation of environmental variables could have a larger impact on in diatoms assemblages in these estuary.

KEYWORDS: Environmental variable, diatoms, Akkeshi-ko, estuary