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Distributional Patterns of Benthic Diatoms From Estuarine Sediments of Watan River (Youngkwang, Korea)

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Benthic diatom assemblages from estuarine sediments of Watan River was studied to elucidate the distributional patterns of benthic diatoms with the alternation of the ebb and flow. The benthic diatoms showed vertical migration within the upper few mm of sediment with periodicity closely related to tidal cycles. The depth limit of vertical migration of benthic diatoms was largely determined by the size of soil particles. Biomass and composition of benthic diatoms showed similar distributional patterns from both silty and sandy sediments. Greater cells and biomass of benthic diatoms were observed from shallow water sites than deep water sites of intertidal zone. Diatoms composed more than 90 percent of total benthic microalgae from both silty and sandy sediments. Maximum cells and biomass were observed from 0 - 1 mm depth both sandy and silty sediments. Cells and biomass of benthic diatoms in the 1 - 2 mm depth increased after desiccation of sediments by retreat of tides from sandy and silty sediments. Vertical migrating activity was greater in sandy than silty sediments, and considerable increments of diatom biomass were observed up to 2 - 3 mm depth of sandy sediments.

Key words: benthic diatoms, estuarine, Watan River, silty sediments, sandy sediments