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Phytoplankton assemblages in main channels of the Nakdong River with different trophic state

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Phytoplankton assemblage in 4 main channels of Nakdong River from January to December 1997 at biweekly intervals. Study sites (rk 182, 149, 107, 27 from the estuary dam) showed a meso-eu-hypertrophic state according to TN, TP, chl.a concentration (rk 182, TN, 3.2 ± 0.8 mg/l, TP, 139 ± 66 μ g/l, chl.a 14 ± 8 μ g/l; rk 149, 6.6 ± 2.1 , 314 ± 236 , 21 ± 15 ; rk 107, 4.9 ± 1.0 , 196 ± 95 , 31 ± 29 ; rk 27, 4.4 ± 1.0 , 232 ± 199 , 34 ± 73). While the low nutrient concentration was maintained in the middle part (rk 182) of the river, the concentration was increased as the river passed through (rk 149) the confluence of the tributary (R. Kumho). Dominant species of all sites were similar, but cell density and the number of species were increased as the river became eutrophic toward the mouth: rk 182, 94species, 1.9×10^4 cells/ml annual average cell density; rk 149, 107, 4.5×10^4 ; rk 107, 126, 4.9×10^4 ; rk 27, 140, 2.2×10^5 , respectively). Notable seasonal fluctuations in algal biomass and near-mono specific bloom by two species (*Stephanodiscus*, *Microcystis*) were frequently observed in the lower part of the river (rk 27). Based on the results obtained from this study, the nutrient concentration (nitrogen, phosphorus) would be not the only principal factor by which phytoplankton species selection takes place in river ecosystem.

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Changes of zooplankton community structure during *Microcystis* bloom in the lower Nakdong River (Mulgum, 1994-1997)

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Weekly studies on the zooplankton community dynamics was done in the lower part of Nakdong River (June-Sept., 1994-1997). Mean cladoceran biomass accounted for 42% of the total zooplankton biomass in the summer, followed by rotifers (38%) and copepods (20%). Cladoceran density (182 ± 338 ind./L, n=82) fluctuation was high throughout the study period due to the highly variable discharge and frequent bloom. During the *Microcystis* bloom, *Bosmina longirostris*, *Bosminopsis deitersi*, *Diaphanosoma brachyurum*, and *Moina micrura* were among the common zooplankton. In particular, *M. micrura* developed its highest density. Zooplankton community in this river appeared to show a characteristic structure of both lentic and lotic ecosystems.