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The Marine Biota in the Waters of the Ulsan Port

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We observed the marine ecosystem to estimate the impact of the construction of the eighth port in the waters of Ulsan port. Surrounded by industrial complexes, Ulsan Port's environmental factor was sewage. At the lower part of Taehwa river, there is trend of increasing water temperature, nitrate, phosphate, and silicate as close to surface, on the contrary to, salinity and pH are decreased. 35 species of Phytoplankton were identified. Species diversity (H') and evenness (J) trend to decrease, when close to the river but dominance (D) appeared to reverse these. Richness (R) ranged from 1.25 to 2.05, but is the highest in the middle of the waters. Deposit were mainly distributed 3 groups, sandy mud around the lower part of the river, sandy clay around the middle of the waters, and mud around the outside part, i.e. the mouth of the port. 15 species of polychaetes were found, and caught 480 indv./m² in density. Strange to say, we couldn't catch any one in the middle of the waters. To survey benthos, using self-made fishing gear, beam trawl, we caught 13 species of fish (such as *Thunnus thynnus*, *Pseudosciaena polyactis* etc.), only one of urochordata (*Halocynthia roretzi*), 3 of mollusks (*Fissidentalium vernedei*, *Mytilus edulis* and *Ruditapes philippinarum*), and 6 of crustaceans. *Ruditapes philippinarum*, especially younger shells, were dominant species of mollusk at the brackish waters, the lower part of the Teahwa river. Anchovy, *angraulis japonicus*, were dominant species of fish, and *Cragon affinis* of crustaceans.

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Seasonal changes of nutrient loading at the lower Nakdong River (Mulgum ; 1994 - 1998)

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Nutrient (TN, TP and SiO₂), chl.a and BOD concentration in the lower part of the Nakdong River (Mulgum) were investigated weekly from June 1994 to June 1998. Also nutrient and BOD loading were calculated using concentration and discharge. High interannual variability of loading in nutrient elements and BOD was observed. In 1997, when annual precipitation was highest, the loadings of TN, TP, BOD and SiO₂ were highest during the study period (115.04t/yr ; 7,583 ; 133,599 ; 193,312, respectively). Whereas, in 1994, when annual precipitation was lowest, the loadings of nutrient elements and BOD were much lower than those of 1997 (TN 36.182t/yr ; TP 2.185 ; BOD 61,065 ; SiO₂ 45,619, respectively). Nutrient and BOD loading were shown seasonal difference between wet season, when including monsoon and the rainy spell in summer, and dry season (annual sep. ~ May). The loadings of nutrient and BOD in wet season were higher than those of in dry season. Especially, in 1997, big difference was shown daily loading of nutrient and BOD between wet and dry season (wet : TN 601.8t/d ; TP 45.3 ; BOD 704.2 ; SiO₂ 1284.2, dry : 156.9 ; 7.1 ; 181.3 ; 119.9 respectively). Interannual variation of accumulated nutrient loading in Mulgum was affected by the magnitude of rainfall events during the summer. Especially, even though there are a little deference among the parameters, approximately more than 50 percent of the total annual nutrient loading was shown during the wet season (from June to August).