

## BENTHIC MACROINVERTEBRATES AND BIOLOGICAL EVALUATION OF WATER QUALITY AT YOUNGHEUNG STREAM IN KOREA

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### ABSTRACT

Benthic macroinvertebrates are commonly used as useful biological indicators in water quality. In the present study, spatial distribution analysis of benthic macroinvertebrates and biological assessment of water quality were investigated at four different sites using benthic macroinvertebrate at Youngheung stream in South Korea. From the four seasons survey, a total of 43 macrobenthic species belonging to five phyla, seven classes, fourteen orders and 34 families were identified. The value of dominance index (DI) was varied from 0.306 (St. D) to 0.342 (St. A) with a mean of 0.333. Beck-Tsuda's Biotic Index (BI) was varied from 30 (St. D) to 36 (St. A) with a mean of 33.5. Total ecological score of benthic macroinvertebrate community (TESB) was 72.8. Average ecological score of benthic macroinvertebrate community (AESB) was 2.659. Benthic macroinvertebrate index (BMI) was 62.610. Mean value of geometric density was 1.378. Mean Shannon-Weaver index ( $H'$ ) at the upper region (St. A) was higher than those of low region (St. D). The Simpson Index (C) was not shown significant differences ( $p < 0.05$ ). Berger-Parker's index (BPI) was varied from 0.166 (St. D) to 0.256 (St. B). Downstream, there are fewer pollution-sensitive invertebrates and more resistant species. In this study, the evaluation of water quality using invertebrates was well reflected.

**Keywords:** Beck-Tsuda's Biotic Index (BI), benthic macroinvertebrate index (BMI), dominance index (DI), Youngheung stream, water quality.