

생태학적 국가 물환경기준 설정 및 관리방안

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A comprehensive water quality assessment technique is the priority requirement for the water management. The monitoring of water environment and any judgment of the water pollution level have been based on the chemical analysis of several substances although pollutants in streams have increased quantitatively and qualitatively in Korea since 1960's, and biological methods have been neglected relatively. Chemical analysis for a few substances, however, at the ephemeral state of the water environment cannot detect any affect of not-analyzed pollutants, synergistic effects, and long-term effects.

Biological methods using freshwater organisms, on the other hand, cover the complexity because they are strongly influenced by the physicochemical characteristics of the water environment in which it lives for a long time. Therefore, various biological methods have been developed and used by many other countries since the middle of the 19th century. For the advanced water management in Korea, biotic indices based on tolerance values of selected indicator organisms must be developed, and biological water quality standards must be established in a scale of whole country. Benthic macroinvertebrates and benthic algae could be excellent indicator organisms in stream ecosystems because of a great variety of adaptations, their high sensitivity to water pollution, and other ecological importance.

For the establishment of biological water quality standards, regulative approach will be necessary and national committee should be composed of specialists of many related research fields. Comprehensive information about the relationship between the concentration of a given pollutant in the water and its biological effect must be collected and analyzed in a large scale.

Key words: Water quality assessment, Indicators, Biotic index, Benthos