

2-10. Water Quality Indices based on Benthic Macro-Invertebrates in Streams and Patterning of Communities using Artificial Neural Networks

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Data for benthic macro-invertebrates reported from the twenty-five published papers in 34 streams in Korea from 1984 to 2000 were investigated, and biological water quality indices based on benthic macro-invertebrate communities were characterized through comparative analyses. In general, classification of water quality according to the biological indices was in accord with BOD in a large scale. At the clean water at low values of BOD, however, the gradient appeared more clearly in biological indices while values in BOD were invariably low. Especially EPT richness efficiently revealed different states of water quality. At highly polluted water with high values of BOD, in contrast, the gradient was more apparent in BOD while the biological indices showed a narrow range in low levels. The community data were further analyzed using artificial neural networks, and the patterns of the samples revealed the impact of spatial location and degree of pollution.