Comparative Community Characterization of Benthic Macro-invertebrates and Algae in the Streams Across Different Levels of Pollution

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Benthic macro-invertebrates and algae were collected in the streams in Gyeonggi Providence across different levels of organic pollution before and after flooding in 2004. At the clean sites, communities of benthic macro-invertebrates were diverse including Ephemeroptera, Trichoptera, Plecoptera and *Gammarus*, while a limited number of the tolerant taxa to organic pollution such as Oligochaeta was selectively abundant at the polluted sites. Communities of benthic algae were also diverse mainly with Diatoms according to the levels of pollution. Biological indices such as EPT, BMWP and BS were measured based on benthic macro-invertebrate communities collected at the sample sites. Among biological indices, BMWP showed a linear gradient along with the levels of organic pollution.

Communities of benthic macro-invertebrates and algae were further classified with the Self-Organizing Map (SOM). The effects of flooding and locality of the sample sites were main factors for determining the patterns of the communities. Grouping of benthic macro-invertebrates was firstly dependent on flooding effect and secondly on locality of the sample sites, while locality was more contributed to patterning of algal communities.