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Development of Species Biotic Index (SBI) for Ecological Assessments in Freshwater Ecosystems

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Species bie of dam area (St. 3) highly varied from "fair to poor" condition, reflecting a destruotic index (SBI), based on a fish assemblage and tolerant score, was developed in this study and applied the values for long-term ecological data set (1996 to 2001) in Boryong dam area, which is located in the mainstream of Ungchun-River of Chungnam province, Korea. According to the methods of Hisenhoff (1988), the tolerant scores assigned 10 classes to each species by its habitat and feeding guild but modified current 7 criteria to 5 scoring standards due to unclear borderline among species. Both 1996 and 1997 before the dam construction, the average values of SBI at St. 1 and St. 2 classified as "good" condition. The values at St. 3 and St. 4 changed from "good to fai r" state. On the other hand, the values of SBI in all sites increased over the year after dam construction in 1998, indicating that fish assemblages are replaced from sensitive to tolerant species. In particular, the SBI value in the insidction of habitat and degradation of trophic composition. Although yearly variations of SBI value were not clear, the trajectories after year 2001 slightly declined at the St. 2 and St. 4 or attained equilibrium state at St. 1 and St. 3, meaning that habitat quality is gradually improved with recovering of sensitive fish population such as *Zacco temmincki*, except for the St. 3. Overall our assessment suggests that the SBI can be a useful tool for the identifying the ecological degradation in various aquatic ecosystems.

Key words : Species biotic index, SBI, Ecological assessment, Fish population, Stream