

Relation of the Bulgarian Biotic Index to the Standardized Indices for Water Quality Assessment in Bulgaria: Study on the Struma River (South-West Bulgaria)

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Abstract: The practicability of the recently developed Bulgarian Biotic Index (BGBI) was tested with the aim to assess the ecological status of the Struma River. The values obtained were compared with the invertebrate community parameters and a set of standardized indices, officially approved for water quality assessment in Bulgaria. High and reliable correlation between BGBI and number of species, and its derivative - species richness, was found. The BGBI moderately correlates with Shannon-Weaver's species diversity and saprobic indices. Generally, the BGBI was found to follow the fundamental trend towards enrichment of the species richness alongside primary saprobic succession in naturally pure waters and along self-purification processes without any specific response to various kinds of environmental stress that affects single watercourses like hydro-morphological changes, regulated discharge, intensive water abstraction and possible toxic pollution that may influence the dynamics and the values of the BGBI besides the changing degree of saprobity along the Struma River. To this end, BGBI may have importance while assessing the biological quality and/or ecological status of the studied rivers rather than for direct estimation of the pollution degree like saprobic indices used to do.

Key words: invertebrate community parameters, diversity and saprobiological indices, river ecological status assessment