

Assessment the Benthic Index of Biological Integrity (B-IBI) and water quality of Shadegan wetland using of macrobenthose communities

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Abstract

This study aimed to evaluating water quality of Shadegan wetland using Benthic Index of Biotic Integrity (B-IBI) of macrobenthos communities. This study was conducted in the spring and summer 2012 in Shadegan wetland. According to the source of pollutants and impact on ecosystem health, 6 stations were selected. Sampling was conducted from sediment samples with four replications using Peterson grab with a surface area of 225 (cm²) was used. From each station ,3 sediment samples for the isolation and identification of benthic macro invertebrates and one sample for grain size analysis and organic matter in sediments measure was taken.Total organic matter and grain size were measured by ignition loss method and sieve method respectively. Physicochemical parameters of water such as temperature, dissolved oxygen, salinity, pH, EC were taken in three times at each stage. During the two seasons sampling, totally 16 species of 5 class macrobenthos were counted and identified. Among the identified group Gastropoda (% 93/79) and then Bivalvia (%5/35) were the most common between two seasons. In this study, B-IBI index 10 criteria were used. The results of B-IBI statistical analysis show that in spring, station 4 and in summer stations 3 and 4 with the other stations were significant difference ($P < 0/05$). Comparison of mean B-IBI in two seasons show significant difference ($P < 0/05$). Based on the results of B-IBI index, the water quality of the stations in the two seasons of spring and summer was in the quality category of high damage. Finally, the results of this study showed that Shadegan wetland has been affected by pollution caused by human activities. Therefore, it seems that the application of coherent management laws and proper education of the people of the region can be very effective in improving the condition of this wetland.

Keywords: Shadegan wetland, Macro invertebrates, Water quality, Benthic Index of Biotic Integrity (B-IBI).