



Applying an Integral Biological Index to Assess Water Quality in Freshwater Ecosystems: Ktiban Channel

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ABSTRACT

Scientists consider biomonitoring necessary for identifying the response of living creatures to the causes of environmental degradation. This method relies on the description of river conditions so that plans to reduce dangers, or for restoration and environmental continuity, can be put into place. In this paper, we evaluated Ktiban stream water quality (Ktiban is one of the branches of Shatt Al-Arab's River) using fish as bioindicators. The biomonitoring platform in this paper includes diversity, bio-evidence, a multi-metric approach, IBI (Integrate biological index), and a multi-variate approach (PCA). Fish were monthly collected using four fishing methods. Twenty-four species belonging to 12 families were caught using those methods, 9 of which were native species and 7 were exotic species, with 8 marine species distributed in percentages of 5.46%, 80.92%, and 13.62%, respectively. IBI was divided into three groups; the species richness group had specific numerical abundances of exotic and native species, with the abundance of the exotic species *Oreochromis niloticus* showing dominance in the fish community composition, with high percentages of the probable species. The metrics of omnivore and herbivore species showed dominance in the stream's fish community. IBI's value reached 50.52% and the stream was considered to have a normal environment. PCA showed the effectiveness and percentage of IBI.

