

Evaluation of water quality in Zarivar Lake of Kurdistan province using qualitative indicators TLI, TSI and WQI_{NSF}

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Abstract

There are different mathematic methods to analyze and interpretation of water quality characters but the water quality index is a simple method and has application. Zarivar Lake is the most important aquatic ecosystem and unique water area in Kurdistan province, which is important in terms of providing suitable conditions for aquatic species and amphibians. The aim of this study was to evaluate the water quality of Zarivar Lake in the west of Iran. In this study, according to the available parameters, three indices of TLI TSI, and WQI_{NSF} were used to determine the quality of water of Zarivar Lake. Different parameters of lake water were analyzed for 18 months in different seasons. Based on the TLI index, the Zarivar Lake was identified with a numerical value of 25.26 as the hypertrophy ecosystem. The value of the TSI index is 64.06, which is in the third class (Eutrophic) of the category. Based on the WQI_{NSF} index, Zarivar Lake has a moderate status with a numerical value of 55.7 and is classified in the third class. According to the calculated indicators, Zarivar Lake has a eutrophic condition and so water quality in Zarivar Lake was not suitable during the study period. Therefore, it is necessary to take strict instructions, especially for domestic, agricultural and wastewater, to protect the water supply from hazardous wastes.

Keywords: Zarivar Lake, Water quality index, TLI index, TSI index, WQI_{NSF} index.