

THE USE OF WATER QUALITY INDESIS (CANADIAN MODEL) IN EVALUATION OF THE WATER QUALITY OF MAIN OUT FULL DRAIN TO FEED AL-HAMMAR MARSH

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ABSTRACT

Water quality index(WQI) is considered as an effective tool to categorized of water resources for its quality and suitability for different uses. The Canadian model of WQI was applied to assessed the water quality of the water of Main out fall drain and water marshes that feed it and the quality of the Euphrates River and marshes that feed it and study the extent of water marshes affected by these sources and determine its suitability for drinking water and aquatic organisms life and for Irrigation for the first time in the study area, was chosen tow stations to collect samples within the study area, the first station located at the Main out fall drain at Khamisia aria in district of Suq southwest Nasiriyah city, and the second station is located in the same area the first station but after mixing with water of marsh which is called locally Alsenaf Marsh.

Water samples collected from the study stations seasonaly starting from the autumn 2014 until summer 2015 . Chosen 25variables of water quality variables with the greatest influence on the water quality and determine the suitability for drinking water and aquatic organisms life and Irrigation for quantifying the WQI: water temperature , the water current velocity, electrical conductivity, total dissolved solids, salinity, turbidity, pH , electrical conductivity, dissolved oxygen , biological oxygen demand , chemical oxygen demand , total alkalinity, total hardness, reactive nitrates, reactive phosphates, sulfates, chloride, sodium, potassium, calcium, magnesium, boron , sodium adsorption ratio, lead , cadmium and fecal coliform bacteria.

The results of the current study ranged to the values of Water quality for the processing of drinking water index (PWSI) between(13.21-34.35) for all stations for the duration of the study and thus classified in the fifth category(0-44) (Poor) to guide the scale.

And it ranged from water quality index values for the purposes of the living Water quality index for aquatic organisms life (WQILA) between (19.85- 41.98)and thus classified as (0-44) (Poor) for all stations for the duration of the study. Whileranged irrigation water quality index values (IWQI)between (15.69-41.68)and thus as (0-44) (Poor).

KEYWORDS: Water quality index(WQI), Water quality & Water quality index for aquatic organisms life (WQILA)