

Title Ecosystem richness degradation assessment from elevated hydro-chemical properties of Chilka Lake, India

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Abstract: A hydrogeochemical analysis of Chilka Lake Ramsar sites has been conducted to measure the surface water quality status and ecological suitability for aquatic habitats. Degree of contamination, water quality index and ecological risk index field-based techniques were employed to analyse the hydro-chemical properties using 48 water samples from across the entire Ramsar region. Among them, 14 predominant factors were identified. The Ramsar area is categorized into five water quality and ecological risk zones with reference to Indian and World Health Organization water quality standards. This field-based study reveals that in the southern, southeastern, and central parts, about 9.89% and 16.12% of areas experienced very poor and poor water quality standards, respectively. Thus, this research work will help government authorities and policymakers formulate appropriate strategies and regulations for controlling and reducing the contamination levels in the Chilka Ramsar region.

Keywords: Hydrogeochemical analysis Chilka Lake Ramsar site Water quality index Ecological risk assessment Surface water contamination

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