

Amphibians and Water Quality: An Assessment of Diversity and Physico-Chemical Parameters of Habitats for Amphibians in Sindh, Pakistan

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Abstract : Water pollution affects amphibians because they are intimately water dependent. The permeable skin makes amphibians very sensitive to the physico-chemical parameters of their aquatic environment. They spawn in water bodies where quality of water can affect the growth, development, and survival of their eggs which may die even before hatching into larvae or developing into adults due to water contamination. Considering the importance of amphibians in agriculture, food web, ecosystem and pharmaceuticals as well as adverse impact of environmental degradation on them, present study was proposed to comprehensively determine the status of their diversity and habitats in Sindh province of Pakistan so as to execute monitoring for their conservation in future. Physico-chemical parameters including pH, EC (electric conductivity), TDS (total dissolved solids), T-Hard (total hardness), T-Alk (total alkalinity), Cl (chloride), CO₂ (carbon dioxide), SO₄ (sulphate), PO₄ (phosphate), NO₂ (nitrite) and NO₃ (nitrate) were analyzed from amphibian habitats using instruments and methodology of analytical grade. The results of present study after being compared with scientific data provided by different researchers and EPA (environmental protection agency), it was concluded that amphibian habitats consisted of high values of analyzed parameters except pH and CO₂. Entire study area required an urgent implementation of conservation actions for saving amphibians.

Keywords : amphibians, diversity, habitats, physico-chemical parameters, water quality, Pakistan, Sindh Province

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