

## Assessment of concentration physicochemical parameters and heavy metals in Kızılırmak River, Turkey

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### ABSTRACT

Kızılırmak is the longest river of Turkey and the most important one as a resource for various water uses. Therefore Kızılırmak river basin is under pressure from a diverse range of human activities. Six stations were sampled along the Kızılırmak river located in Nevsehir city during 2013–2014 seasonally. The physico-chemical parameters (water temperature, biological oxygen demand (BOD), chemical oxygen demand (COD), pH, dissolved oxygen (DO), conductivity, nitrite ( $\text{NO}_2^-$ ), ammonium ( $\text{NH}_4^+$ ), ammonia ( $\text{NH}_3$ ), phosphate ( $\text{PO}_4^{3-}$ ), sulfate ( $\text{SO}_4^{2-}$ ) and some metal concentrations (Zn, Cu, B, Cr, Ni, Pb, Hg, As, Se, Sb, Mn, Cd and Al) were measured in the water samples to determine the water quality of the Kızılırmak river. When the water quality classes were examined in terms of the measured physico-chemical parameters, it was detected that the river is IV. class for nitrite, III. class for BOD, phosphate and pH, II. class for  $\text{NH}_4^+$ -N. The results showed that the heavy metal concentrations in water of the Kızılırmak river were within the quality class I. limits of the EPA and WPCR.

*Keywords:* Heavy metals; Physico-chemical parameters; Kızılırmak river; Water quality

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