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SEASONAL VARIATION OF CERTAIN HEAVY METALS IN KUNTBHYOG LAKE OF HIMACHAL PRADESH, INDIA

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ABSTRACT

Heavy metal pollution is one of the major problems of lakes and wetlands all over world. It is responsible for causing serious threats to flora and fauna especially humans. Kunthbyog is natural freshwater, mid altitude lake situated at Rewalsar town, Mandi district of Himachal Pradesh, India 1750 meter above mean sea level. Study was conducted in (2011-2012) to find out heavy metal contaminations and their seasonal variations in lake, if any. Water samples were analyzed for water quality appraisal of lake by inductively coupled plasma emission spectrophotometer (ICP-ES). During pre-monsoon and monsoon seasons Cd was beyond permissible limit (0.01 mg/l), whereas Pb, Zn, Mn, Cu, Fe, As and Ni were within safe limits prescribed by United states environmental protection agency (USEPA) and World health organization (WHO) for drinking water quality. In lake water concentrations of heavy metals irrespective of seasons, Fe > Zn > As were observed with similar trend, whereas concentrations were high especially in pre-monsoon compare to monsoon season. Trend of seasonal variations in heavy metal concentrations observed during pre-monsoon, monsoon seasons were Fe > Zn > As > Cu > Cd > Ni > Mn > Pb and Fe > Zn > As > Pb = Cd > Mn > Ni > Cu respectively. It reflected that anthropogenic activities linked with heavy metals contamination and water quality of lake. Public awareness regarding fresh water lake should be encouraged to revive its life.

KEYWORDS: Kunthbyog Lake, Rewalsar Town, Seasonal Variations, Heavy Metals, Water Quality