

Research Article

Analysis of Heavy Metals Concentration in Water and Sediment from Bori River, Naldurg Maharashtra

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ABSTRACT

The present communication deals with the study of analysis of heavy metal concentration in water and sediment from Bori River Naldurg, Maharashtra. The work was carried out during the year 2014 (January to December). The results of the present work shows that, the heavy metal content from the non-polluted zone of Bori River (Naldurg) water was found below detectable level. Samples from polluted zone showed variations in their heavy metal content in River water and sediment.

The higher concentration of heavy metals is due to the local domestic and agricultural wastes which caused severe damage to the aquatic flora and fauna of Bori River.

Key-words – Bori River-Heavy metals- Water sediment.

INTRODUCTION

The effect of heavy metals on aquatic organisms is currently in pollution study. Heavy metals are being introduced into an aqueous environment through industrial and urban effluents soil leaching and rainfall. The widespread contamination of aquatic ecosystem with heavy metals is the increasing concern of environment scientist [6].

The increasing amount of waste generated by other population, urbanization and industrialization, finds its way in aquatic ecosystem many of these persistent pollutants get locked in food chain and reach at higher levels with increasing concentrations, sometimes far away from source of pollution.

Aquatic animals are capable of taking up and accumulating heavy metals to a degree may times than that present in surrounding medium [2] workers like Peshwe and Babare (2010)[4], Maharashtra worked on the same present work aimed to analyzed the level of same heavy metals in water and sediment from Bori River, Naldurg. Dist. Osmanabad.

MATERIALS AND METHOD

The monthly collection of samples of water and sediment was done from the three sampling stations and brought to the laboratory for further work.

From these sampling stations the water and sediment samples were collected and acid digested by using per-chloric acid, Nitric acid [3]. All samples were analyzed for heavy metals by using AAs (Chemito Model). Results are expressed in mg/lit for water and mg/g for sediment.

RESULT AND DISCUSSION

The results of the present work i.e. heavy metals and sediments showed in Tables I and II.

Table – I

Heavy metal content in water samples content in water samples from Bori River, Naldurg.

Station	Heavy Metals	Presence
A	Mn	0.4
	Ni	1.1
	Fe	0.4
	Cu	1.3
	Zn	12.1
	Cr	0.014
	Hg	BDL
B	Mn	0.45
	Ni	0.6
	Fe	0.28
	Cu	0.39
	Zn	12.10
	Cr	0.004
	Hg	BDL
C	Mn	0.5
	Ni	0.5
	Fe	0.4
	Cu	0.81
	Zn	11.20
	Cr	0.017
	Hg	BDL

Table -2

Heavy Metal content in sediment sample collected from Bori River, Naldurg.

Station	Heavy Metals	Presence
A	Mn	0.9
	Ni	2.2
	Fe	1.6
	Cu	4.6
	Zn	15.0
	Cr	0.3
	Hg	BDL
	Mn	1.35

B	Ni	3.11
	Fe	2.4
	Cu	4.7
	Zn	13.1
	Cr	0.4
	Hg	BDL
C	Mn	1.7
	Ni	1.4
	Fe	1.9
	Cu	2.7
	Zn	13.1
	Cr	0.6
	Hg	BDL

BDL – Below detection level.

Heavy metals are considered to be serious contaminants of Aquatic system due to their extended biological half lives inherent toxicities to Nature at low content ration and high rates of bio-accumulation [5,1].

Present study showed highest concentration of zinc in water and sediment samples pollution is mainly due to receiving heavy load of untreated sewage which causes hazardous effect on the fauna of river and May also effect the users of river water and fish consumers in long run.

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