

RESEARCHES IN WATER POLLUTION COMPONENTS: A REVIEW

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ABSTRACT

More than 62-70% of the fresh water in Fluid (Liquid) form of our country is converted into being unfit for consumption. Not only India, but many countries are also suffering from the water pollution problem. This has been explained clearly by the help of considerable number of the sources water pollution references in this paper. Various sources of pollution such as sewage discharge, industrial effluents, home waste water and agricultural runoff and their potential has been studied in mass. Various prescribed standards for different category of inland water have been explained.

Key words:-*Pesticides, Pharmaceuticals, Chemical Pollution, Turbidity, Pollution, Heavy metals, Runoff,*

INTRODUCTION:-

Our survival on Earth depends on three basic resources – water, air and soil. Water pollution occurs when harmful substances—often chemicals or microorganisms—contaminate a stream, river, lake, ocean, aquifer, or other body of water, degrading water quality and rendering it toxic to humans or the environment. Demand of water rose six-fold between 1900 and 1995, more than double the rate of population growth.

Components of the Water Pollution:-

- 1.) Oil and Derivatives:-**The common plant oil derivatives include esters such as fatty acid methyl esters (biodiesel), alcohols such as bioethanol, acids such as levulinic acid, and ethers. Because of technical and processing requirements, plant oil derivatives are used as the feedstocks for the production of green chemicals.
- 2.) Carbonic Compounds:-**The causes of water pollution include a wide range of chemicals and pathogens as well as physical parameters. Contaminants may include organic and inorganic substances. Sewage treatment plants and industrial wastewater treatment plants are usually required to protect water bodies from untreated wastewater.
- 3.) Thermal Pollution:-**Thermal pollution, sometimes called "thermal enrichment," is the degradation of water quality by any process that changes ambient water temperature. A common cause of thermal pollution is the use of water as a coolant by power plants and industrial manufacturers. Other causes of thermal pollution include soil erosion.
- 4.) pH:-**Low-pH water will corrode or dissolve metals and other substances. Pollution can change water's pH, which in turn can harm animals and plants living in the water.
- 5.) Heavy Metals:-**Examples of heavy metals include mercury (Hg), cadmium (Cd), arsenic (As), chromium (Cr), thallium (Tl), and lead (Pb). ... Heavy metal poisoning could result, for instance, from drinking-water contamination (e.g. lead pipes), high ambient air concentrations near emission sources, or intake via the food chain.
- 6.) Biodiversity in Water:-**Water pollution makes river biodiversity more vulnerable to climate warming. Polluted rivers with low oxygen levels are more susceptible to the harmful effects of climate

change, according to a new study co-authored by MARS scientist Professor Steve Ormerod “First, at higher temperatures, water can hold less oxygen.

REASON:-

Water pollution is caused due to several reasons. ... Sewage and Waste Water: Sewage, garbage and liquid waste of households, agricultural lands and factories are discharged into lakes and rivers. These wastes contain harmful chemicals and toxins which make the water poisonous for aquatic animals and plants.

Problems rise from last few years:-

Major water pollutants include microbes, nutrients, heavy metals, organic chemicals, oil and sediments; heat, which raises the temperature of the receiving water, can also be a pollutant. Pollutants are typically the cause of major water quality degradation around the world. The main problem caused by water pollution is that it kills organisms that depend on these water bodies. Dead fish, crabs, birds and sea gulls, dolphins, and many other animals often wind up on beaches, killed by pollutants in their habitat (living environment). Pollution disrupts the natural food chain as well.

CONCLUSION:-

Major sources of water pollution are discharge of domestic and agriculture wastes, population growth, excessive use of pesticides and fertilizers and urbanization. It is recommended that there should be proper waste disposal system and waste should be treated before entering in to river.

REFERENCES:-

- [1] Adakole, J.A., and Oladimeji, A.O. (2006). The effects of Pollution on Phytoplankton in a stretch of River Kubanni, Zaria, Nigeria. Proceedings of the 15th annual Conference of Fisheries Society of Nigeria (FISON), Pp.151-158.
- [2] Adejuwon, J. O., and Adedokun, M. A. (2012). Physiochemical and Bacteriological Analysis of Surface Water in Ewekoro Local Government Area of Ogun State, Nigeria: Case Study of Lala, Yobo and Agodo Rivers. International Journal of Water Resources and Environmental Engineering, 4(3): 66- 72.
- [3] Adedokun, L.A. (2004). Enumeration of Total Heterotrophic Bacteria and Some Physicochemical Characteristics of Surface Water used for Drinking Sources in Ogun River, Nigeria. Journal of Environmental Treatment Techniques, 3(1): 28 – 34.
- [4] Adeyemi, S.O., Adikwu, I. A., Akombu, P. M., and Iyua, J. T. (2009). Survey of Zooplanktons and MacroInvertebrates of Gbedikere Lake, Bassa Kogi State, Nigeria. International Journal of Lake and Rivers, 2(1): 37 – 44
- [5] Agbabiaka, T.O., and Oyeyiola, G.P (2012). Microbial and Physiochemical Assessment of Foma River, ItaNno, Ilorin, Nigeria: An important source of domestic water in Ilorin metropolis. International Journal of Plant, Animal and Environmental Science, 2(1): 209- 218.
- [6] Aghoghovwia, O. A., and Ohimain, E. I. (2014). Physicochemical Characteristics of Lower Kolo Creek, Otuogidi, Bayelsa State. Nigerian Journal of Agriculture, Food and Environment, 10 (1):23 - 26.
- [7] Ali, J. (2012). An Assessment of the Water Quality of Ogunpa River Ibadan, Nigeria. M.Sc. Dissertation. University of Ibadan, Ibadan, Nigeria, Pp. 32 – 41.

[8] Arokoyu, S.B., and Ukpere, D.R.T. (2014). Access to Safe Water Supply and Sanitation in Lower Orashi River Basin, Rivers State, Nigeria. *ARPN Journal of Science and Technology*. 4 (11): 639-646.

[9] Asaolu, S.S. (2012). Interrelationship of Heavy Metals Concentration in Water, Sediment as Fish samples from Ondo State Coastal area, Nigeria. *African Journal of Science*, 1(5): 5-61.

