

GEOCHEMICAL ASSESSMENT OF HEAVY METALS IN WETLAND SEDIMENTS FROM AROUND MARYLAND AREA OF LAGOS, SOUTHWESTERN NIGERIA

V.B. OMOTUNDE^{1*}, A.S. OLATUNJI² AND F.F. AJAYI³

¹Department of Geology, University of Ibadan, Ibadan Nigeria (*correspondence: phickieomotunde@gmail.com)

²Department of Geology, University of Ibadan, Ibadan Nigeria (akinadeshadrach@yahoo.com)

³Department of Geology, University of Ibadan, Ibadan Nigeria (felifunmi@gmail.com)

Introduction and Methodology

Wetlands are particularly susceptible to the release of heavy metals thus they are important for ascertaining the pollution status of the catchments areas. This study was designed to investigate the distribution and contamination level of some heavy metals with depth in wetland sediments from Maryland, Lagos as well as ascertain the sources of these heavy metals.

Eight core samples of 30cm length were obtained from the wetlands. Each core was subdivided into six at 5cm intervals. The samples were dried, prepared and analysed using ICP-MS for elemental determination while the mineralogical constituents were determined using XRD. The physico-chemical parameters (pH, TDS and EC) of the samples soaked in deionized water were also determined. The pollution status for the selected metals was evaluated using Enrichment Factor, Geo-accumulation index, Contamination Degree and Pollution Load Index. Geochemical metal associations were determined using Correlation and Factor analyses.

DEPTH(CM)	Cu (ppm)	Pb (ppm)	Zn(ppm)	Cd(ppm)
0-5	19-145	83-209	105-1088	1-46
5-10	22-169	27-211	109-1035	1-37
10-15	16-212	58-256	77-1103	1-41
15-20	23-250	50-283	12-1134	2-62
20-25	8-139	11-272	78-1406	1-65
25-30	5-205	5-355	12-1134	2-62

Table 1: Results of Metal Concentration in Maryland Wetland Sediment with Depth

The geochemical evaluation of the sediments revealed that the Pb, Cu, Zn and Cd concentration (Table 1) in the wetland poses significant risk to the environment and human health.