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TITLE: Studies and Transactions on Pollution Assessment of the Lagos Lagoon System, Nigeria

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ABSTRACT:

The Lagos Lagoon system is a brackish coastal lagoon?the largest in the West African coast with a large series of estuaries?located between longitude 3o23? and 3o40?E and between latitude 6o27? and 6o48?N. It is a shallow expanse of water (0.3?3 m deep), 50 km long and 3?13 km wide and separated from the Atlantic Ocean by a narrow strip of barrier bar complex. This report is on the levels of pollution and nutrients status of the Lagos Lagoon system including physicochemical properties, pesticides organochlorines (OC), polyaromatic hydrocarbons (PAHs), heavy metal species and nutrients observed between 2002 and 2008. Watersheds of the highways on the lagoon had higher concentrations of nutrients (phosphorus and nitrates) relative to other locations on the Lagoon. The western part of the Lagoon was found to have higher concentrations of Cd, Cu, Pb and Zn than the other points. Lagos Lagoon and the adjoining creeks show high anthropogenic input of PAHs and other persistent organic pollutants (POPs). The major hydrocarbon index in most samples was at C29, C31 and C27, indicating vascular plants sources. Mean PBT levels in water and in sediment increased with time between 2004 and 2007. PBT distribution in the lagoon followed the pattern, sediment > biota > water, though some exceptions occurred where the biota bioaccumulated more PBTs than are found in both sediment and water. The Lagoon biota bioaccumulated organochlorine pesticides above allowable limits and thus pose a high risk to human health. The levels of some pollutants in the Lagoon have negatively impacted on the environmental quality which has indirectly affected the social and economic activities of the dependants and this requires improved management strategies to ameliorate. Indeed with the high population that the estuary/lagoon system supports, consideration for its designation as an international waterbody and its concomitant attention is now paramount.

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