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A study of the impact of thermal pollution on the physical and chemical characteristic of the sediment of the Lagos Lagoon

Ajayi Olatunbosun Sunday
Federal College of Fisheries and Marine Technology, Lagos

The need to generate power worldwide had given rise to the use of various sources such as nuclear, gas, coal, wind, hydro, thermal and solar. Some of these are not environmentally friendly and create challenges particularly when the world is facing a major crisis, global warming. The effect of coolant or waste heat discharge on the sediment characteristics, at the Egbin area of the Lagos lagoon, were investigated from March to August 2012 at five (5) stations. The bottom sediment quality reflected the influences of coolant water introduction, net tidal seawater inflow in the dry season and freshwater incursions effects in the raining season. Five sites were sampled between 900h and 1100h. During the study period, rainfall ranged between 104mm-476mm. The physical and chemical parameters of sediment investigated were pH, moisture content, total organic content, total organic matter, nitrate, phosphate, copper, chromium, lead, nickel, zinc. Sediment type was predominantly sandy to muddy sand with changes in the nature of the substratum within relatively short distances. Effort should be made on carrying out more research on this study sites in subsequent time to establish a database in relation to pollution. This would serve as a sort of baseline data for further research. Furthermore, comparative studies could be carried out on other benthic community to determine species diversity and consequence of the effect of elevated water temperature.

bosun.ajayi@fcfmt.edu.ng