

STATUS OF HEAVY METAL ABUNDANCE IN THE NEGOMBO LAGOON

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Having observed higher values of certain heavy metal concentrations in bottom sediments on the continental shelf northwards of Negombo, it was decided to study the heavy metal distribution in sediments of the Negombo lagoon.

Bottom sediments and silt/clay collected into vertically fixed traps on the lagoon floor in 20 stations were studied twice during and after the monsoon of 1989 for Pb, Zn, Cr, CO, Ni, Mn and total Fe. Generally it was observed that both during the rainy and dry seasons, silt/clay in the traps contained higher concentrations of all heavy metals analyzed than in bottom sediments. This suggests that the transportation of metals is closely associated with the finer fraction of detritus. Except Pb all the elements showed markedly a higher concentration during the rainy season. It could be concluded that the input of heavy metals to the lagoon is largely due to land drainage and fresh water run off, such as Dadugamoya, Hamilton canal and Jaela.

Pb values in sediments ranged from 11-68 ppm (37 ppm mean) and that in silt/clay from 12-123 ppm (52 ppm mean). Higher levels of Pb concentration prevailed in both sediments as well as silt/clay at the extreme north of the lagoon where a large number of fishing motor boats are anchored. This is suggestive of a possible Pb source in the lagoon.

Concentration range (and average value) of other elements (in ppm) studied in sediments and silt/clay respectively are as follows:

Zn - 44/296 (160); 85/254 (172); Cr - 28/189 (62); 45/125 (94)
Cu - 7/22 (12); 09/25 (17); Co - 14/51 (30); 22/57 (37)
Ni - 18/98 (53); 27/100 (65); Mn - 344/558 (487); 144/1184 (564)
Total Fe - 32,900/76,050 (48,500); 18,380/97,080 (51,000)

Lagoons are characterised by typical physio-chemical environments in which comparably a higher concentration of heavy metals are encountered than in a sandy river or marine environments. Though higher concentrations of all trace elements, particularly Pb, Cr in the Negombo Lagoon is attributed to this phenomena, it warrants a strict monitoring procedure.