

D-05: Distributions of sulphur and pH variations in surficial sediments and water of the Muthurajawela marshy environment

A Pitawala¹, A Senaratne^{1,2}, K Dahanayake^{1,2}
(¹Dept of Earth Sciences, Institute of Fundamental Studies,
Kandy, ²Dept of Geology, Univ of Peradeniya)

The pH, Eh (oxidation-reduction potential) values and sulphate concentrations of surface, pool and interstitial waters extracted from Muthurajawela swampy soils were observed. In addition, total sulphate and sulphate concentrations were measured in surficial sediments collected from the marshy environment.

In the flooded areas of the intertidal zone, high pH (5.5-7.5), negative Eh values and low sulphate concentrations were recorded. On the contrary, low pH (3.5-5) and high sulphate concentrations were noted in pool water of supratidal zone. High pH values are indicative of reducing conditions of the flooded area. The lower values appear to be due to supratidal conditions of the emerged area and high rates of evaporation.

Total sulphur levels in peat are variable in the range of 1-12%. Sulphate sulphur accounted for 8% of the total sulphur in the peat. High total sulphur and sulphate sulphur values are found towards the seaward side and lower values were noted in the southeast hinterland of the Muthurajawela marsh. These observations suggest that the major source of sulphur in the Muthurajawela marshland is the ocean.

Financial assistance by International Development Research Centre (IDRC) Canada for research on Eppawala phosphate is acknowledged.