

2017). The study area was sub-divided into three categories (a) Northern, (b) Mid, and (c) Southern regions. Water collected from these stations was used for determining the general hydrographic parameters and the sediment were used for analyzing Cadmium concentration. Cadmium was analyzed in two fractions – Total Cadmium as well as bio-available Cadmium which was present in the <63 μ size fraction of sediments. The total Cd content was found to be highest at S7 (27.36 mg/kg) and lowest at station S5 (4.22 mg/kg). In the bio-available fraction of sediment the lowest value was observed at S5 (7.59 mg/kg), whereas highest concentration was at S6 (27.014 mg/kg) and S15 (27.01 mg/kg). However, the total metal content was observed to be higher towards the northern side of the Lake. In the southern as well as middle regions Cd was observed to be higher in the <63 μ size fraction of sediment. It was found that Contamination Factor (CF) >1 was reported for Cd in all the stations in this particular study. The higher values of Igeo was found at stations S6, S7 and S8 stations (10.6095, 10.5602, and 10.3139, respectively) which explains very strong pollution and these three stations were identified as industrial sites. All the stations belonging to the entire study area were highly polluted with respect to Cadmium. In the Northern side, Cd showed higher values than the southern as well as middle part. In the <63 μ size fraction also the same trend was observed.

NS-14

Temporal variations on hydrochemical parameters and sedimentology of Sasthamkotta Lake in Kollam district, Kerala

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Sasthamkotta Lake is a major Ramsar site in southern part of Kerala. It is an isolated wetland mainly fed by rainfall and underground aquifers. In recent years it was found that the surface area and volume of the Lake was decreasing. In the present study, the temporal variations in the physico-chemical factors of water and sediments were investigated. Water quality characteristics showed marked temporal variations. Dissolved oxygen was at maximum during post-monsoon due to low temperature, high aeration and photosynthetic rate. Nutrients in the water were copious for the persistence of aquatic life. Most of the hydrochemical parameters were within the desirable limit. pH and organic

content in the sediment was high during pre-monsoon which supported the survival of benthic organisms. Nutrients such as phosphorus and nitrate in the sediment supported the fertile environment of the lake. Therefore, the water in Sasthamkotta Lake is suitable for consumption and various domestic purposes by the people in Kollam city and nearby panchayats.

NS-15

**Spatial variability of water level of dug well
samples from Perayam Grama Panchayath,
Kollam district, Kerala**

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As a result of increased population growth, industrialization and modern agricultural practices, groundwater resources faces severe challenges with respect to quantity as well as quality. Major water resources of Perayam Grama Panchayath (PGP) are the estuary, streams, ponds (surface water) and dug wells (groundwater). The western, north western and south western portions of PGP are bounded by Kumbalam and Kanjirakkottu *Kayals* (two main lobes of Ashtamudy estuary). The present study deals with the spatial variability of water level fluctuation in the sampled dug wells from different areas of PGP. The relative change of groundwater level in PGP, implies higher water level fluctuations in the eastern parts of the Panchayath, while relatively lower fluctuations in the western portions that is adjacent to the Ashtamudy estuary.