

Sedimentation Studies in Massanjore Reservoir of Mayurakshi Basin

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ABSTRACT

The suspended material discharged by river into reservoir, transport pollutants and are the natural material that fill channel and reservoir. The input of suspended material to reservoir is variable in concentration and composition from river to river, as well as changing with time in any particular river. The variation in average concentration of suspended sediment in a river basin is related to seasonal changes in precipitation and run-off within the drainage basin of river. The composition of the suspended material discharge by river into reservoirs varies from river to river, depending on the composition of the rock and soils in the river drainage basin, the weather climate to which these rocks and soils have been exposed and the energy of river to transport various size of material.

Remote Sensing of reflected solar radiation can provide timely and repeated information of suspended sediment flow concentration pattern in reservoirs. Multi-temporal and multiband satellite data are extremely useful in determining sedimentation rate in a reservoir and mapping different concentration levels of sediment load. The synoptic view provided by remote sensing gives very different data from that which can be obtained with surface data collection and sampling. In recent years, Digital image processing and visual interpretation techniques have been used to obtain the useful information on the location and extent of sediment distribution pattern in the water spread area of a reservoir.

In the present study, digital image processing and visual interpretation technique have been utilized to locate the sediment concentration in the Massanjore reservoir of Mayurakshi river basin, West Bengal-using IRS-IB LISS II satellite data. Two seasons data (pre and post monsoon) for the years 1989 and 1993 were utilized to evaluate the sediment concentration in the Massanjore reservoir. Year-wise and seasonal changes in sediment concentration at various location in the reservoir have been analyzed and delineated in a map.