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Population dynamics of macrobenthic polychaetes from Vembanad backwater, a Ramsar site on the south west of India

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Polychaetes are the most abundant macrobenthic community in aquatic systems that play a crucial role in recycling detritus, regulating the flow of energy in the benthic environment. Vembanad wetland system, a Ramsar site on the West coast of India is the largest estuarine system that is renowned for its rich biodiversity. To regulate salinity intrusion in the Vembanad ecosystem, the Thannermukkom barrage was constructed in 1975, dividing it into fresh water dominated southern and a northern region dominated with brackish water that has grossly altered the eco-biology of the region. The study was carried out from March 2011 to February 2012 on a monthly basis, covering six stations in the southern part and four stations in the northern part to understand the ecology and diversity of macrobenthic polychaetes. Fourteen species of polychaetes belonging to 13 families were observed from the study. The species Namalycastis indica contributed 26% of benthic biomass, followed by Nephthys oligobranchia (19%) and Dendronereis aestuarina (18%). Namalycastis indica and Dendronereis aestuarina were the only the nereids that survived in the brackish and as well as freshwater environment of Vembanad backwater. In the southern sector of the backwater, Namalycasis indica contributed 80% of the biomass followed by Dendronereis aestuarina (20%). Maximum species richness was seen in stations at the proximity to Cochin Metro city and the species, Paraheteromastus tennuis, Dendronereis aestuarina, Prionospio cirrifera, Mediomastus spp. and Nephthys oligobranchia were dominant in higher organic enrichment zones. The polychaetes, Glyceraalba and Polydora spp. were highly tolerant to degrading water quality condition due to industrial pollution in the greater Cochin region. The pollution problems in the in Cochin region arising from urban effluents, municipal wastes disposal and developmental activities have grossly affected the distribution and diversity of benthic polychaetes in the Vembanad backwater.

Biography

Asha C V, Research Scholar in the Department of Marine Biology, Microbiology and Biochemistry, is pursuing her PhD in Cochin University of Science and Technology for the last 4 years. She is working in the Ministry of Environment & Forests, Govt. of India funded research project.

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