Theme 6: Coastal ecosystem: Biodiversity, livelihood aspects, conservation

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STUDY OF MACROFAUNAL DIVERSITY IN A SENSITIVE COASTAL ECOSYSTEM, CHILIKA LAKE, EAST COAST OF INDIA

[1]Debasish Mahapatro**,** [2]Premalata Pati [2]R.C. Panigrahy, [1]R.N. Samal, [1]A.K. Pattanaik and [3]S. Panda

[1] Chilika Development Authority, Bhubaneswar

[2]P.G. Department of Marine Sciences, Berhampur Univeristy, Odisha, 760010

[3]Director, Nandankanan Zoological Park, Bhubaneswar

dsmahapatro @ gmail.com

Macrobenthos, besides playing a significant role in demershal fisheries, can also be used as the ideal indicator of environmental stress due to their sedentary mode of life style. The present study was carried out to deciphere the spatio-temporal variation in macrobenthos in the Chilika lagoon in relation to the contemporary changes in water quality and sediment characteristics. Sediment samples were collected during March 2007 to February 2008, from different locations of the Chilika lagoon covering three different season i.e. premonsoon, monsoon and post monsoon. Physico-chemical properties such as temperature, salinity and DO of the overlying water mass were measured at each location. Seasonal variation was observed in the salinity regime of the lake system. The salinity values remained higher in the pre monsoon season (mean value 18.2 PSU) followed by premonsoon (mean value 7.8 PSU) and lowest value was in the monsoon seasons (mean value 7.5 PSU). Temperature however did not show much variation during different seasons. Dissolved oxygen content was high in pre-monsoon (mean value 10 mg/l) in the pre-monsoon season followed by the post monsoon (mean value 7 mg/l). The lower oxygen values were obtained in the monsoon season (mean value 5 mg/l). The macrobenthic density was found to be more in the post monsoon season (mean=15,000 individulas/m^2) followed by 13,000 individulas/m^2 in the monsoon season. In the post monsoon season the mean population density was lower 8,000 individulas/m^2. It has been reported that in many tropical lagoons and estuaries, less population density during monsoon period. But, minimal density values were found in post monsoon season. High density could be due to the appearance of large number of opportunistic and / or predator benthos in large number over the infuanal representatives.

Key words: Macrobenthos, seasonal variation and Chilika lake