Pollution Status in Mangrove Ecosystem of Mahi and Dadhar River Estuaries

Bhavik K. Patel* and Kauresh D. Vachrajani
Marine Biodiversity and Ecology Lab, Department of Zoology, Faculty of Science,
The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.
E-mail: pbhavik79@gmail.com, kauresh@gmail.com

Abstract: Mangrove forests are extremely important coastal resources, which are vital to our socioeconomic development. However, they are often considered as uncreative land and used as discharge ground for pollutants. The Gulf of Khambhat and coast of south Gujarat had reasonably good mangrove cover in the past but the ecosystem has degraded due to development activities. The present study was carried out in four mangrove sites located along the Mahi and Dadhar river estuaries, Sarod, Neja, Asarsa and Dahej. Due to estuarine and gulf hydrodynamics and sediment composition mangrove forests have high organic load, both suspended and dissolved. The organic matter in the form of industrial effluent add to the total organic load of the mangrove ecosystem in this region. In present study COD of water ranges from 768 to 18.12 mg/l while sediment COD ranges from 233 to 15 mg/l. Level of phenolic compound ranges from 10.26 to 0 mg/l in water and sediment from 4.7 to 0 mg/l in sediments. Mangrove litter degradation add to natural phenolics in water and sediments, however, in present studies higher phenolic levels were due to pollution discharges in the gulf. Heavy metals like Cu, Zn, Cr, Ni, Pb, Hg, Cd, Co and Mn were recorded from the water and sediment samples of the studied mangrove ecosystems. Heavy metals like Cu, Zn, S, Si, Sr, Ti and Br were recorded from the root, stem and leaves of Avicennia marina samples also while, Cu, Zn, K, Fe, Sr and Br were recorded from samples of crab tissue. The status of over all pollution and its effect on crab population is discussed.

Key words: Metal pollution, Mangrove, Brachyuran Crab, Mahi-Dhadhar Estuary
10. List of Publications


