

Seasonal water quality status in Udhayamarthandapuram Bird Sanctuaries (Tamil Nadu)

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SUMMARY: A study was conducted in seasonal water quality variation in Udhayamarthandapuram bird sanctuary. This sanctuary was visited twice in a month during August 2010 to March 2011. During the study periods, analysis of 17 water quality parameters was made at three distinct seasons namely, pre-monsoon (August and September), monsoon (October, November and December) and post- monsoon (January, February and March). The temperature, dissolved oxygen and nitrate were recorded highest in pre- monsoon of the study periods. The turbidity, salinity, nitrate, sodium and potassium were recorded highest in monsoon and the nitrate, pH, phosphate, hardness, chloride, calcium, sulphate, zinc and iron were recorded in post-monsoon of the study periods.

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Wetlands are at great value to mankind in a variety of ways such as agriculture, fishing, sewage disposal, cultivation of edible water plants, reed gathering, fuel wood collection, domestic use, wildlife production, flood control, storm production, ground water recharge, pollution control, sediment control and maintaining high atmospheric humidity. (Cladrige and Davies, 1993 and Buckton, 2007). Among the inland wetlands the freshwater wetland includes river system, streams, irrigation canals as well as reservoirs, lake, ponds and marshes including rice fields. Tanks, reservoirs and other water bodies' marshes, freshwater lakes and the stagnant as lentic ecosystem and the running water bodies fall into the lentic ecosystem category. There are 32 river system 11 major reservoirs 2679 canals and 38863 tanks in Tamil Nadu. The rivers of Tamil Nadu flow eastwards from the Western Ghats and are entirely reined. The perennial rivers are Cauvery, Palar, Cheyyar, Moyar, Bhavani, Amaravathi, Vaigai, Noyal, Suruli, Guhar, vaipar, Valparai and Varshali. The 760 km long Cauvery is the longest river of the

state. The total length of the rivers of Tamil Nadu is 7420 km, the area of reservoirs is 0.52 lacks ha the area of tanks and ponds 6.92 lacks ha and 63,000 ha back waters and swamps (Venkatraman, 2005). Tamil Nadu has 31 natural wetlands covering an area of 58,068 ha and 20,030 manmade wetlands with an area of 201132 ha. According to Sathe *et al.* (2001), a larges number of ecological processes in the fresh water bodies is influenced by temperature. Graham *et al.* (1982) had shown the water temperature to regulate photosynthesis in the aquatic ecosystems. pH of wetland as an important factor in water bird distribution had also been reported earlier. Water electrical conductivity influenced the density of water birds. Dissolved oxygen level influenced the density of all water bird groups. According to Wetzel and Linkers (1997), among all the biotic factors, dissolved oxygen is the most important factor in the fresh water life as it provided valuable information about the biological and biochemical reactions going on in waters, Sathe *et al.* (2001) stated that dissolved oxygen is of great limnological significance as it regulates metabolic