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A quality assessment of the Pattiyapola wewa by using physical, chemical, biological parameters.

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The most common fresh water habitats are the irrigation tanks of which there are over 10000 in Sri Lanka. The focus of the present study was the Pattiyapola wewa is a one of the man made tanks in the Hambantota district in Sri Lanka. The area of water spread of this tank is 37.20 hectares and its capacity is 571 acre-feet.

Physico-chemical and biological Parameters of the tank were studies for a period of six months (from September, 2005 to March, 2006). The mean values of different physic-chemical parameters recorded during the study period in the Pattiyapola tank were, pH = 8.2117, Temperature = 30.1667^{0}C, Conductivity = 400.8824 S, DO = 7.1200 ppm, BOD = 2.3356 ppm, COD = 1.8161 ppm, NO_3^- = 268.8689 μgl^-, PO_4^{-3} = 53.3356 μgl^-, Alkalinity = 504.3750 mgl^-, Salinity = 0.1972 ppt, Primary productivity level I = 5.882E-03 ppm, Primary productivity level II = -0.5341 ppm, Depth = 1.333 m and Secchi disk depth = 0.566 m.

According to the statistical analysis of Pearson correlation, some physic-chemical parameters were shown to be significantly correlated with each other. The inhabitant of the study area used water for bathing, washing, agriculture and for fishing.

Ten fish species were recorded in this study and most of the species belonged to the family Cyprinidae. The most dominant fish species at the Pattiyapola wewa, were *Puntius filamentotus*, *Puntius chola* and *Rasbora daniconius*.

FBI value and abundance of zooplankton were also estimated. The FBI value (5.16) indicates a fair water quality in the tank.

The zooplankton community represented by the especially Cloadocerance and Copepods. Use of pesticide and detergence were identified as the main sources of increasing some of the physico-chemical parameters such as PO_4^{-3}, NO_3^- concentrations and alkalinity.

Vegetation cover was also comparatively high in the tank indicating some degree of enrichment of the water body.