

PERMANENT REFERENCE

SOME PHYSICAL AND CHEMICAL PARAMETERS CHANGE IN BATTICALOA LAGOON WITH SURFACE WATER MOVEMENT

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ABSTRACT

This project report is based on the water quality and surface water movement and is concerned with the analytical studies of water from the Batticaloa lagoon. The literature so far available does not fulfill the water quality measures. Only a few reports are available regarding the presence of pollutants in the Batticaloa lagoon. A complete water quality maintenance report is urgently needed to advice the organizations, funding agents and individuals, who are interested in promoting the aquatic food production such as fish, shrimp, crab and oyster farming, and in addition to prevent further pollution.

Three types of measurements were carried out to reveal the present status of the lagoon. Among the water quality parameters, some physical parameters such as temperature, pH, conductivity, salinity, and turbidity; and some chemical parameters such as dissolved oxygen, nitrate, nitrite, phosphate, sulphate, total iron, and free chlorine were correlated with the surface water movement. These results can be used to compare with Sri Lankan Standard (SLS) and International Standard with the level for the living conditions of lagoon organisms such as fish and shellfish.

High ranges of parameter changes were clearly observed in Kattankudy, Urani, and along the agricultural area based lagoon sites, where more chemicals and other parameter enter into the Batticaloa lagoon. From Kattankudy, a large amount of pollutants enter the lagoon. Urani is another site, from which more shrimp farm wastes enter the lagoon. The surface water movement is the highest physical parameter observable within four-months of the study period from October 2000 to January 2001, and other parameter change is also within the acceptable level.

This analysis elucidated that the Batticaloa lagoon water parameter changes fall within the acceptable level of Sri Lanka standard tolerable level, Changes of the parameter is given bellow: Temperature 28°C – 34°C; pH 6.64 - 8.06; Salinity 0.00 – 27 PSU; Turbidity, 94 FAU; Dissolved oxygen 4.5 – 5.9 mg/l; Nitrates 0.01 – 4.0 mg/l; Nitrites 1 – 13 mg/l; Phosphates 1.68 – 0.11mg/l; Sulphates 15 – 656 mg/l; Total iron 0.07 – 2.30 mg/l; Free chlorine 0.01 – 0.75 mg/l.

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