

**EVALUATION OF WATER POLLUTION STATE
IN KANDY LAKE USING WATER QUALITY
INDEX**

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Abstract

The Kandy Lake is an artificial freshwater body in center of Kandy city which is home for large number of native plant and animal species therefore water quality and health of the lake are vital for conservation of these species. Water quality of Kandy Lake is always change through time and also human activities can further accelerate the rates of water quality changes in lake. Excessive algal growth, oxygen depletion and fish kills are common problem in lakes due to the changes of water quality. Therefore important to a regular monitoring programme with respect to water quality and aquatic life. The present study aimed at evaluate the water pollution state in Kandy Lake using Water Quality Index and determine the affect of Stake holder role in sustainable management in Kandy Lake. This study consist of two parts: Water sampling Surveys to clarify the current situation on water quality of lake and related water bodies, and interview survey to investigate preferences of local people and tourist on function of Kandy Lake. Nineteen samples were collected from lake and related water bodies. Physical (Temperature, Electrical Conductivity) Chemical (pH, Chemical Oxygen demand, Dissolved Oxygen, alkalinity, sulfate, Nitrate, Biological Oxygen Demand, calcium, magnesium) and Biological (Total Coliform, E- Coli) parameters were measured as water quality parameters . Water quality Index was calculated using ten factors including pH, Electron Conductivity, Total Alkalinity, Calcium, Magnesium, Chloride, Nitrate ,Sulfate, Dissolved oxygen and Biological Oxygen Demand. The study showed that high water pollution state in Outgoing canal and west part of Kandy Lake that near the outgoing canal. It also indicated low water pollution state in floating wetland area in Kandy Lake. It is at risk of due to high eutrophication which may cause harmful microalgae bloom or oxygen depletion in the bottom layer.