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## **Chapter 7**

### **Studies on Physico-Chemical Parameters of Community Pond**

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#### **Abstract**

A pond ecosystem is characterised by relatively quiet water and abundant vegetation. It is a small area of still, fresh water. The present investigation was carried out in Sankara pond which is present in the heart of Sundargarh town, Odisha. The pond is home to many water birds, local as well as migratory. Due to anthropogenic activities there is rapid degradation of water bodies. Hence bioremediation is required in order to restore the affected water bodies. The study was carried out in winter season from 24<sup>th</sup> December, 2019 to 2<sup>nd</sup> January, 2020. Different physico-chemical parameters and biological parameters of water were analysed during this time interval. The value of most of the physico-chemical parameters of water are in desirable limit except the BOD (6mg/l) value which exceed the normal limit which indicates the enrichment of water due to the uncontrolled dumping of garbage, debris and sewage. The pH of the water was found to be between 6.87 to 9.05, the conductivity was between 344 to 470 $\mu$ S, the salinity was between 0.22 to 0.24ppt, the turbidity was between 1.55 to 2.33 NTU, the TDS was between 200ppm to 218ppm and the total hardness during the study period was 100mg/l, the calcium and magnesium value was 20.84 mg/l and 11.66 mg/l respectively. The water quality of the Sankara pond was moderate for aquatic organisms, for aquaculture and agricultural uses, though it is moderate for aquatic organisms it need to be restored because of the increase in BOD level.

Key Words: Limnology, sankara pond, physico-chemical parameters, Zooplankton, water birds.

#### **Introduction**

Water is a vital component necessary for life without it, there is no life. The study of water bodies is equivalent to the study of life (Dutta and Patra, 2013). The credit of scientific studies on freshwater goes to P.A.Forel (1901). Who used the term 'limnology' for the first time and is regarded as the father of modern limnology. Limnological studies covers the study of freshwater bodies such as lakes, ponds, river, wetland and estuaries butnow a days it also includes inland salt water system (Welch, 1952). Studies on freshwater bodies, that may be natural or manmade has gained much importance in recent year because