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Analysis of physicochemical parameters at Koliyak coast

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Abstract

Koliyak is located on the coast of Bhavnagar. It is included in the gulf of khambhat. The quality of water is an important for living marine organisms. In the present study, we carried out a study of the Physico-chemical parameters such as Dissolved oxygen, Total Dissolved Solids, pH, Conductivity, Temperature, Resistancy, and Salinity. In physicochemical among selected parameters level of turbidity was high found. The main purpose of this study to determine the present water quality at koliyak coast.

Keywords: Koliyak, gulf of Khambhat, physico-chemical parameters

Introduction

The water quality parameter is the condition in understanding the habitat throughout the world water is one of the most compounds of the environment. Water is essential for the entire living organisms. Nowadays human population, industrialization, use of fertilizers in the agriculture and man-made activity it is extremely polluted with different harmful contaminants. Water quality effects on organisms qualitative as well as quantitatively. The study of the water quality is essential to know about the water environmental condition of the coast. (Apexa Patadia *et al.* 2015) ^[1] A hydrological survey is one of important for marine biology. Essential knowledge of the seawater quality is necessary for the biology of the ocean, which is rolling in a marine ecosystem. (Harvey, 1945) ^[4] Dissolved oxygen is the important factor in water life, its supports to the Aquat Sic life. In aquatic ecosystem physical as well chemical both parameter is important. the physical Factors such as Dissolve oxygen, Turbidity, etc. which is the significant influence on marine life it affects organisms that can live there while chemicals factors like pH, influence the distribution of organisms. PH is determining the nature of water (alkaline or acidic). Low pH value higher is the corrosive nature of water (Gupta D.P. *et al.*, 2009) ^[3] the salinity is based on the conductivity measurement which depends on temperature and pressure at which it is determined. Hence, it slightly deviates from the definition of salinity being the total dissolved salt content of seawater. Water is the important medium which plays an important role in a chemical reaction in living organisms. (Nybakken JW., (1997) ^[6] 5mg/l or above dissolve oxygen is supporting good metabolic rate also other physiological activities. Throughout the world, water is one of the most compounds of the ecosystem. Water is required for all living organisms. Due to increased population, industrialization, utilize of fertilizers, etc. Have the highly polluted with different harmful contaminants. It is not easy to observe the biological phenomenon fully because the chemistry of water reveals much about the metabolism of the ecosystem and explain the general hydro - biological relationship (Basavaraja Simple *et al.*, 2011) ^[2] Dissolved oxygen is an important component in aquatic life its support to the aquatic life (Nair N.B., 1986) ^[5] In aquatic ecosystem physical as well chemical both parameter is important. The physical parameter which is a significant influence on marine life it affects organisms that can live there while chemicals parameters influence the distribution of organisms

Materials and Methodos

Study Area

The ecosystem diversity is very rich in Gulf of Khambhat comprising of mangroves, estuaries, Creeks and vast intertidal mud flats this study we conducted on Koliyak coast which is also known as "Nishkalank Mahadev".

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It is a famous temple in Gujarat. Koliyak coast is included in Gulf of Khambhat. It has a mostly muddy shoreline. It is located in Bhavnagar district of Gujarat. This Study is conducted N 21° 36' 58.9" E 72° 17' 66.4"



Fig 1: Study Site -Koliyak

Methodology

The study was implemented on the field as well as Laboratory. Seawater samples were directly collected from the surface into the clean plastic cane. Dissolved oxygen is measured by Winkler's method in this method Collected sample is treated with concentrated solutions of manganous chloride and Iodide in sodium hydroxide solution. Dissolved oxygen reacts with the precipitated manganous and it turns Mn^[1] to Mn^[4] under the alkaline condition it also measured by Dissolve oxygen meter also. Portable PH meter was calibrated using standard pH buffer. PH and temperature were measured immediately. PH is measured with pH meter and Temperature is measured with Thermometer. Other parameters such as Conductivity, Resistancy, Salinity were measures with the assist of Multipara meter kit (Oakton Multi kit) while Turbidity was measured by a Turbid meter.

Result and Discussions

The pH is important for the chemical and biological properties of sea water. PH is a fluctuate and it depends on various factors. During the study pH value was 7.9. It indicates that the sea water of the study area is not a harmful condition for marine diversity. Surface water is a varied place to place and season to season. It is depending on a climatic condition. On the study area temperature is 30.6°C occurred. Turbidity is shown the clarity of the water. It effects on photosynthesis of primary producers. Excessive limit of turbidity may lead to the level of drop off photosynthesis. It can be an effect of the abundance of diversity. On Level of turbidity is high 738 NTU observed. The Koliyak coast has a level of turbidity is high. Salinity shows how much salts are dissolved in sea water. The salinity is not equally found in the entire oceans, it is differently found. Average oceans salinity is 35ppt found. Here in the study area, it was found 37.72ppt. Dissolved oxygen is crucial in water; it is utilized by

invertebrates, microorganisms, plants, etc. Through the air or plant, the oxygen is entering Dissolved oxygen enters in the water. In the study area, it was found 5.51mg/l. Dissolved oxygen is provided information of other e.g. Nutrients, activities of bacteria, etc. (Premlata Vikal, (2009) [8] Patil. P.N, *et al.*, (2012) [7].

Conclusion

The Bhavnagar is a coastal city and many people's are depending on marine Livelihoods. Study of the physical and chemical water parameters forms an important part of fisheries and its related biota. So healthy water quality is crucial. The present study conducted in the Koliyak which is situated in Bhavnagar district. It is concluding under the Gulf of Khambhat. On this coast less diversity distribution is occurring. The level of oxygen is average found. It has a high turbidity level it may be due to river runoff.

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