

Preface

Water is one of the basic necessities for the survival of human beings and prosperity of civilization. The ever increasing growth of population, industrialization, steady rise in irrigation activities, urbanization and high level of living standards exert tremendous pressure on the available water which is highly uneven in its spatial and temporal distribution both in quantity and quality. The water is put to different uses such as irrigation, industry, power generation, drinking, bathing, recreation, fisheries, wild life propagation, pollution abatement etc. For each of the uses water is required in appropriate quantity and required quality.

Water quality problems stem basically from two factors, the natural hydrology of a river basin and the development and use of land and water resources by human beings. Depending on the interrelation of these two factors, a wide variety of quality problems can result. Each river basin, therefore, is unique and it must be subjected to individual and intensive water quality assessment to provide a proper basis for judicious management of the land and water resources.

Until recently, most of the water resources problems concentrated on providing adequate quantities of water with generally less concern for quality of water. In many cases exploitation and poor management practices resulted in a degradation of the available water resources. As man continues to develop the earth, by harvesting nonrenewable resources such as fossil fuels, metals, and in some cases water and by disposing of wastes, he will continue to affect water resources.

Water quality problems being interdisciplinary in nature, scientists and engineers working in this area must be familiar with a wide range of issues including the physical processes of mixing, dilution and settling, chemical and biological processes, treatment technologies and remediation, physical and mathematical modelling, measurement etc. There is a need to understand the factors causing the changes and also the effect of the change on other aspects of the water system, such as the linkage between water quality and sediment or water quality and biota.

The objective of the symposium, for which these proceedings were compiled, was to foster a dialogue between scientists researching hydrological issues and those researching water-quality issues. By combining the two major disciplines, hydrology and water quality, it was hoped that a useful contribution to the scientific understanding of factors affecting water quality may be provided.

The symposium was jointly organized by the National Institute of Hydrology, Roorkee and Central Pollution Control Board, Delhi. Support from the Indian National Committee on Hydrology (INCOH) is gratefully acknowledged.

Editors