Preface

Water is essential for life and its resources are exploited more than other natural resources since man strode the earth. From the dawn of civilization lakes, dams and rivers attracted mankind as the human settlement on their banks.

Similarly, wetlands are areas of land covered with shallow water or have water at, or near, the surface for all or part of the year. Wetlands are important for several reasons. They represent only a part of our land base but they shelter a lot number of species. Many species only use the wetland for a small but important part of their life cycle, to breed and reproduce.

The pollution of water resources is increasing steadily and good quality of water is not available for a normal human being. Therefore, development of suitable and economically viable technology in order to meet out the increasing demand for good quality of water is essential.

The problem of water conservation and management of surface water resources are magnified as they lack proper ground ecological data. In India, fresh water has come up for research programmes but overall, progress has been slow and detailed works on large perennial dam on ecological lines are needed.

The average ecosystem is so incredibly complex that ecologists interested in dynamics have tended to concentrate their attention on single species or isolated populations.

This initiated the author to undertake a detailed investigation of a fresh water dam Chittaurgarh in
Balrampur-district of eastern U.P. The thesis embodies author’s research work carried out at the P.G. Department of Botany, M.L.K.(P.G.) College, Balrampur (Dr. R. M. L. Avadh, University, Faizabad). This study advances our knowledge of ecology, photodiversity indices and eutrophic gradient of Chittaurgarh dam a wetland fresh water ecosystem of great ecological significance.

Our late Prime Minister Jawhar Lal Nehru called the dams as temples of modern India, which store precious, rain water to irrigate form lands and generate electricity, supply drinking water and save land from floods and droughts. Chittaurgarh dam was constructed considering the same objectives for this area. Unfortunately, due to some negligence and avoidance of state government and local peoples, this dam is unable to fulfill the demands of the local resident. This work will focus first time the ecological problems of this investigation and it will highlight the objectives of the Chittaurgarh dam. In the dam, bottom or benthic zone is a place of intense biological activity having decomposition of organic matter.

The most striking attraction of Chittaurgarh wetland is its location, i.e. situated in rural surroundings, which can conserve the flora and fauna and may develop as a prominent ecotourism spot.

The thesis embodies the average results of two years of investigation of various physico-chemical and biological properties of the dam water. It has been divided into 11 chapters focusing all experimental aspects with their interpretation of results and conservation aspects.