

## **1.0 Synopsis Of Study**

### **1.1 Introduction**

Wetlands mean different things to different people. To some, they are stretches of waterlogged wastelands that harbour pests and diseases and should therefore be drained or filled to make better use of the area. To others, wetlands are serene beautiful landscapes, usually associated with open water and serve as important habitats for waterfowl, fish and other wildlife.

Ecologically, they are important ecosystems, transitional between open water and terrestrial ecosystems. They are endowed with specific structural and functional attributes, and performing major ecological roles in the biosphere. The details shall be discussed in the subsequent chapters.

An all inclusive definition of wetlands is as follows: 'areas submerged or water saturated lands, both natural and man-made, permanent or temporary, freshwater or marine'.

In India, wetlands are distributed in various regions ranging from the cold and arid zone of Ladakh to the warm and karid zone of Rajasthan and Gujarat to tropical monsoon areas of Central India. About 4.1 million hectares area is covered by wetlands in India. Only recently, in our country has the value of wetlands been fully recognised. Ministry of Environment & Forests, Government of India, has published a directory of wetlands in India (1988) in this direction. In recent years, there has been a growing environmental awareness in regard to the status, conservation and management of wetlands. In this regard, there is an urgent need to update documentation and mapping of wetlands of value.

**The ecological significance of wetlands can be understood more coherently by throwing some light on the functions they perform.**

### **1.2 Functions of wetlands**

Wetlands perform many functions depending on their type and category. They are listed as:

- Ground Water Recharge
- Regulating the micro-climate
- Habitat for species
- Natural sinks

These, and other functions, shall be explained in detail in the subsequent chapters. The importance of the wetland ecosystem has been realised recently and steps have been initiated for their conservation and management, to educate the public on the need for their conservation as well as their economic utility and to commence scientific and application oriented studies on their productivity

### 1.3 Study Area

The upper and lower lake of Bhopal (the Capital of Madhya Pradesh) and its catchment area located between N 23° 0' - 23° 11' to E 77° 5' - 77° 5'. The influence of Bhopal region is considered as a part of the study area characteristics. The upper and lower lake of Bhopal divides the city in two parts, the northern (old) Bhopal and the southern (new) Bhopal. The significant areas of study area directly affecting Bhoj wetlands shall be further delineated into a planning area, for purposes of preparation of environmental plan. The criteria for the same shall be discussed in chapter 8 consequently.

### 1.4 Bhoj wetlands

Bhoj wetlands, in the given study, refer to the upper and lower lake of Bhopal. Situated in the heart of a rapidly developing capital city, these lakes have immense socio-cultural and ecological value.

The Bhopal lake is ascribed to Raja Bhoj, the Paramara ruler who ruled from 1010-1055 A.D. The lake created by the great Bhoj was indeed more vast. It still exists in a somewhat diminished form and is immortalised in the verse:

"Tal to Bhopal tal, aur sab talaiya

Rani to Kamalapati, aur sab ranaiya

Garh to Chittorgarh, aur sab garhiya

Raja to Ramachandra, aur sab rajaiya."

(If there is a lake, it is the Bhopal tal, and all are but small ponds/If there is a queen, she is Kamalapati, all others are minor queens/ If there is a fort, it is Chittorgarh, all the rest are fortresses/ If there is a king, he is Ramachandra, all others are petty chiefs.)

## **1.5 Need of the study**

The upper lake constructed in the 11th century is an important source of water supply to the city of Bhopal. It supplies 7-8 mld of potable water. Over the years, the water spread and storage capacity have considerably reduced. This, predominantly due to accumulation of silt. Also, inflow of sewage, which although at present is insignificant, but if allowed to continue, can affect the water quality.

The lake is an important landmark and is identified with the image of Bhopal city. Increasing urbanisation in a haphazard manner, is slowly affecting the health of the lake.

The lower lake built in the 17th century, is already in bad health. The lake has already reached eutrophic levels, mainly due to the inflow of sewage. The water spread is continuously decreasing due to encroachments along the shore line. Dhobi ghats around have increased the pollutants load and the entire catchment is urbanised with a high population density. This lake, which acts as an important recreational spot and the much required 'open space' in the city is thus facing problems.

Hence a comprehensive plan to manage and maintain the health needs to be evolved, as the Bhopal Development Plan does not clearly address these environmental issues.

## **1.6 Aim of Study**

To prepare environmental plan for Bhoj wetlands.

## **1.7 Objectives**

- To identify the status of Bhoj wetlands.
- To identify the factors causing degradation.
- To study the lake system and protect it.
- To achieve sustainable development of the lakes and their catchments through:
  - optimum and sustainable use of resources
  - regulating non-conforming and non-compatible land uses in the catchment
  - maintaining the water quality of the lakes
  - improving the economic status and qol (quality of life) of the settlement in the catchment.

## **1.8 Scope**

Aim of the study is to prepare environmental plan for bhoj wetlands..the areas directly affecting the wetlands are the fringe areas and the catchment area. Although the study area which includes Bhopal region is considered in the study for the total scenario implications, the scope of planning for the area is restricted to the catchment, which is delineated as the planning area. This area is delineated on the basis of geohydrological characteristics. [ refer chapter 7]. Hence the proposals are in the form of a broad land use plan for the rural catchment and policies for developing the fringe areas in the urban catchment.

# 1.8 Methodology

OBJECTIVES  
BHOJ WETLANDS

Conservation of wetlands  
Development of catchment area

BACKGROUND STUDY [literature]

Wetlands analysis  
Tools and techniques

Components of an Environmental Plan

PREPARATION OF ENVIRONMENTAL PLAN

INFORMATION  
BASE

• Land Suitability

DATA ANALYSIS

Projections

• Environmental Status

Factors causing degradation

ISSUES AND PROBLEMS

CONCEPTUALISATION OF  
PLAN



