



WETLAND ECOLOGY

The World Book Encyclopedia (1996), USA, defines "Wetland is an area of land where the water level remains near or above the surface of the ground for most of the year." The United State Development of Interior Fish and Wildlife Service Authority, however adopted the following definition, 'The wetlands are lands transitional between terrestrial and aquatic systems where water is usually at or near the surface or the land is covered by shallow water'. Moreover this definition includes several attributes which are:

- *At least periodically the land must support predominantly hydrophytes.
- *The substrate is predominantly undrained hydric soil.
- *The substrate is non-soil and is saturated with water or covered by shallow water something during the growing season of each year.

Status Of Wetlands :

- i) They occupy a status intermediate between terrestrial and aquatic system.
 - ii) These are most productive sites which have a wide range of natural functions.
 - iii) The wetlands play a significant role in Global cycling and geochemical balance of carbon, nitrogen and sulphur.
 - iv) These are poorly drained areas less periodically saturated or covered with water. Such water-saturated soil or sediments with stubby [খাটো মোটা-শক্ত, শিকড়পূর্ণ] herbaceous vegetation and with little or no standing water are called **marshes**. Herbaceous macrophytes dominate such area.
- Remark :- IUCN publication viz., "Freshwater Wetlands in Bangladesh" 1993 considers that half the country of Bangladesh turns into wetland during rainy season. The principal wetlands considered were *rivers, streams, shallow fresh water lakes and marshes, water storage reservoirs, fish ponds, seasonally flooded cultivated plains, estuarine systems including mangrove swamps*.

Wetlands –Importance in India :

Wetlands directly or indirectly have an enormous ecological, economic, commercial and socio-economic importance and values. Two important parameters of importance of wetlands are – Functions and Values as identified by various wetland scientists.

Some important functions need little elaboration [Source: IWRD, 1992 Action Programme for the Conservation of Wetlands in South and West Asia; M. William in "Wetlands" 1993 has also accepted that same set of functions.]

- i) Heavy metals and pesticides and herbicides can be removed from the water by ion-exchange and absorption in the organic and clay sediments and by uptake by plants such as the bulrush (*Typha angustata*), the common reed (*Phragmites karka*), water hyacinth (*Eichornia crassipes*) etc.
- ii) Domestic sewage is also poured into marshes which remove an average of 86.2 % of the coliform bacteria from faeces, 80.1% of B.O.D, 43.7 % of the C.O.D, 29.1 % of the suspended solids and 13.4% of the total phosphorus and reduces the turbidity by 43.5 %. [Source: Mitsch and Gosselink, 1986]
- iii) Agricultural pollutants and sewage sometimes cause an increase in the level of nitrate in rivers, lakes and ground water which cause *eutrophication* of water. Several aquatic plants such as Duck weed (*Pistia stratiotes*), water hyacinth etc are capable of removing nitrogen to a substantial quantity.