

## STUDY OF POND AS A LENTIC ECOSYSTEM

### STUDY OF PHYSICO-CHEMICAL FACTORS IN POND

**1. BACKGROUND:** What is ecosystem? Different types of aquatic ecosystems. What is pond? Scope and potentials of pond based fish production in Bangladesh. Importance of physico-chemical factors in pond.

#### **2. OBJECTIVES:**

1. to measure the physical factors in terms of water depth, temperature and transparency;
2. to determine the chemical factors in terms of dissolved oxygen, pH, CO<sub>2</sub> and alkalinity; and
3. to recommend suitable measures for the improvement of pond ecosystem.

#### **3. MATERIALS AND METHODS**

**A. Location of the study ponds:** geographical location with a map including area/size (pond and water area) and depth

**B. Date and time of study:**

**C. Weather condition during study time/period:**

**D. Study of physical factors**

**Water temperature:** A centigrade thermometer within the range of 0°C to 120°C was used to record the water temperature. The temperature of water was recorded by dipping the thermometer at the depth of 20 to 30 cm below the surface. Similar process was followed three times and finally mean value was recorded as pond water temperature.

**Water transparency:** A secchi disk was used for the measurement of water transparency. The secchi disk was slowly lowered into the water on a graduated line and the depth at which it became invisible was noted. The sinking of the disk was always viewed under a sunshade for considerable accuracy in result. The data, thus obtained were expressed as secchi disk depth in cm. Similar process was followed three times and finally average value was recorded as water transparency and it was expressed as cm.

**E. Study of chemical factors**

**Determination of DO, CO<sub>2</sub>, pH and alkalinity**

#### **4. RESULTS:**

#### **5. COMMENTS:**

## **A REPORT BASED ON THE FIELD VISIT ON**

### **A. STUDY OF RIVER AS A LOTIC ECOSYSTEM**

### **B. STUDY OF FLOODPLAIN ECOSYSTEM**

#### **1. BACKGROUND:**

What is lotic ecosystem? What is a river? Scope and potentials of river based fish production in Bangladesh. Factors affecting the fish production in river.

What is floodplain? Scope and potentials of floodplain based fish production in Bangladesh. Factors affecting the fish production in floodplain.

#### **2. OBJECTIVES:**

1. to measure the physical factors in terms of water depth, temperature, transparency and water current;
2. to determine the chemical factors in terms of dissolved oxygen, pH, CO<sub>2</sub> and alkalinity;
3. to make a list of available fishes, extinct/vulnerable fishes, plankton and aquatic plants;
4. to know the different modifications including fish conservation strategies (if any) ; and
3. to recommend suitable measures for the improvement of river/floodplain ecosystem.

#### **3. MATERIALS AND METHODS**

**A. Location of the river/floodplain:** geographical location with a map including area/size and depth (in winter and monsoon) under the specific thana/upazila.

**B. Date and time of study:**

**C. Weather condition during study time/period:**

**D. Study of physico-chemical and biological factors:** information on the materials/equipments required

**E. Study on fish & plant diversity and modifications:** questionnaire based survey

#### **4. RESULTS:**

#### **5. COMMENTS:**