

Freshwater Ecosystem-II

Components of Pond Ecosystem

A pond is a typical freshwater ecosystem comprising of four components. These include:

1. Abiotic substances
2. Producers
3. Consumers and
4. Decomposers

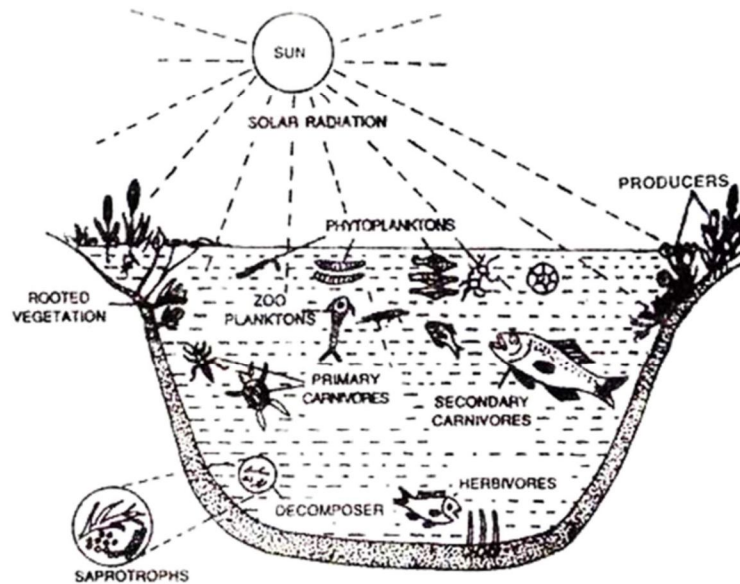
Abiotic Substances

These are substances that include both inorganic and organic components. The main inorganic substances are H_2O , CO_2 , O_2 , N_2 , Ca, P, etc. These are in a state of solution which are available for the nutrition by organisms.

Producers

In pond ecosystem, Producers are mainly of two types –

- (1) Relatively larger plants that grow in shallow water. They may be rooted (Vallisneria, Hydrilla, etc) or free floating plants, (pistia, water hyacinth, etc).
- (2) Minute floating plants, which are mainly algae and constitute phytoplankton. They are distributed throughout the pond ecosystem as far as light reaches. They are more important than the rooted plants in producing the food for the ecosystem.



Aquatic Ecosystem (pond)

Consumers

Consumers are primary, secondary and tertiary.

Primary consumers:

They feed on plants acting as producers. These are of two types:

- (a) Zooplankton: *Amoeba*, *Daphnia*, *Cyclops*, *Diaptomus*, *Bismina* etc
- (b) Benthos: snails, small fishes, chironomus larvae, etc

Secondary consumers:

They are carnivorous which feed on the plant eaters such as prawn, some fishes.

Tertiary consumers:

Tertiary consumers eat primary consumers such as *Walloga attu*, *Channa spp*, snakes, etc.

Decomposers

They are various types of aquatic bacteria and fungi act as decomposers. They are abundant at the mud bottom and rich in dead and decayed plant and animal accumulation. Aquatic microorganism decomposes the dead bodies rapidly into much simpler forms, which are released for future use of the autophytic plants.

Plankton and Benthos

Planktons and Benthos are two major life forms in water. The organisms which are more or less dependent on water currents or wind action for their movements are called plankton. Phytoplankton are free floating plant organisms. Organisms that are attached with or resting on the bottom or living in the bottom sediments are called benthos.

Functions

Aquatic ecosystems perform several jobs. They help in water purification, recycling of nutrients, recharging of ground water, preventing floods and also offering habitats for aquatic life. It is also used in the tourism industry in coastal regions for attracting tourists.