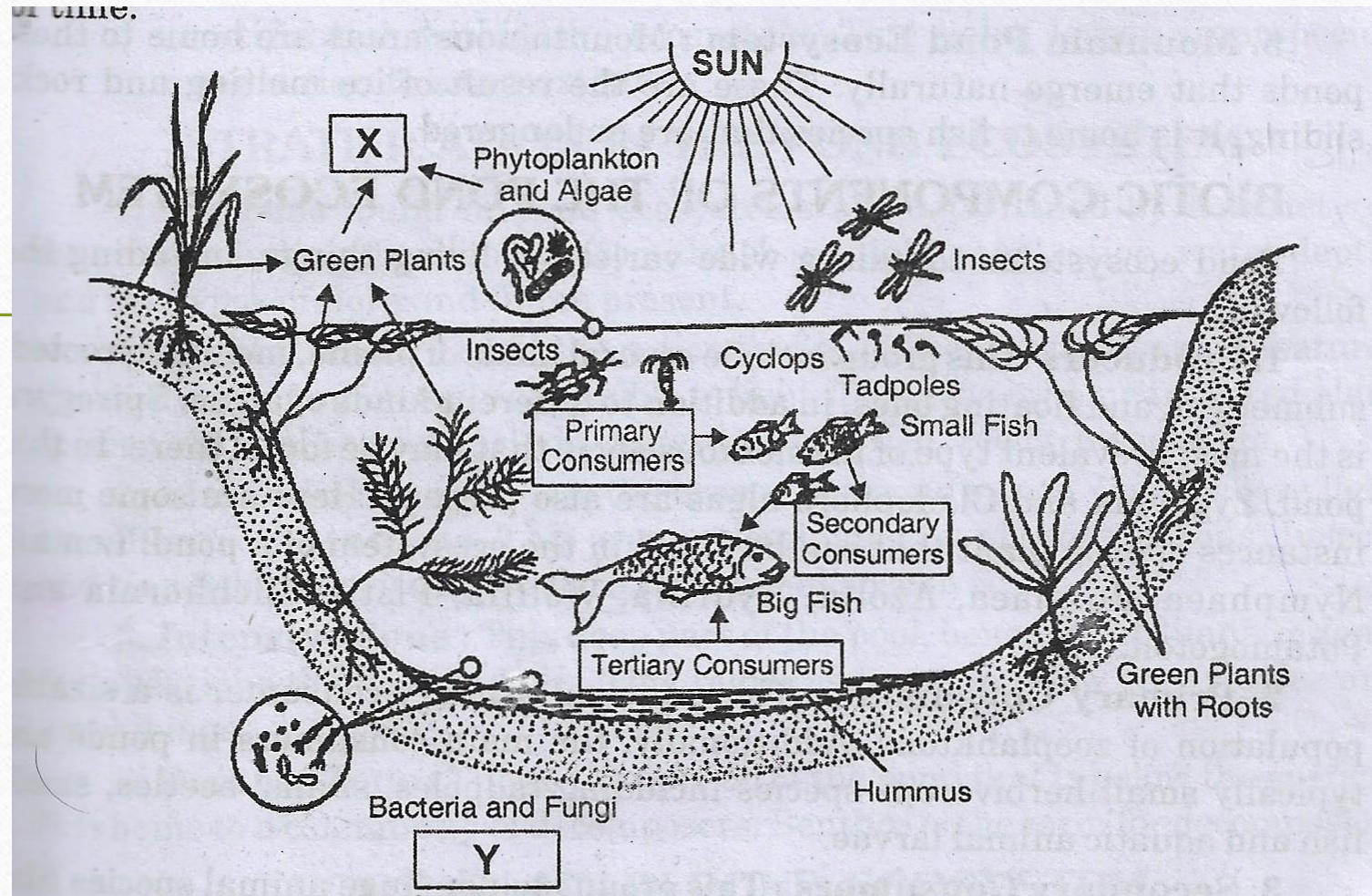


POND ECOSYSTEM

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CONCEPT OF THE POND ECOSYSTEM

Pond ecosystems are a type of freshwater ecosystem that can exist temporarily or permanently. It is home to a wide variety of aquatic plants and animals that interact with one another and the environment around them. The pond ecology is classified as lentic since its water persists for an extended period of time.



POND ECOSYSTEM

FEATURES OF THE POND ECOSYSTEM

The characteristics of the pond ecosystem are as follows:

1. The water in a pond stays calm in its environment.
2. The ecosystem of the pond displays benthic, intensive, coastal and limnetic zones.
3. The habitats surrounding ponds are naturally defined.
4. The scale of pond habitats demonstrates diversity.
5. The biotic elements of the pond ecosystem exist at various ecological levels and ultimately evade competition in order to thrive. Fish reside in the middle layer, while scavengers and decomposers inhabit the lowest layers. The pond's border is lined with plants that offer insects and tiny animals cover.

TYPES OF POND ECOSYSTEM

The kinds of pond ecosystems that exist are as follows:

1. Garden Pond Ecosystem: This artificial pond was created by humans and contains imported animal species and decorative flora from around the globe.
2. Venereal Pond Ecosystem: This is a type of seasonal pond that forms temporarily, as a result of water collecting in earth pits after heavy rainfall.
3. Salt Pond Ecosystem: These naturally arise on coastal areas. They hold salted water. The reason for this is water logging. They can also appear in places called rock pools-rocky spots along the coast. They can support the life of marine plants and animals because they contain salty water.
4. Fresh Water Pond Ecosystem: The soil becomes saturated with water as a result of constant rainfall, creating these pond habitats naturally. A wide range of fauna, including amphibians, crustaceans and freshwater fish, call these environments home.
5. Mountain Pond Ecosystem: Mountainous areas are home to these ponds that emerge naturally. These are the result of ice melting and rocks sliding. It is home to fish species that are endangered.

BIOTIC COMPONENTS OF THE POND ECOSYSTEM

Pond ecosystems contain a wide variety of living things, including the following:

- 1. Producers:** this group include several kinds of plants, including rooted, submerged, and floating ones, in addition to different kinds of algae. Spirogyra is the most prevalent type of filamentous algae that may be found there. In this pond, Zygonema and Cladophora algae are also present. Here are some more instances of each plant that can be found in the ecosystem of a pond: Lemna, Nymphaea, Jussie, Azolla, Hydrilla, Wolffia, Pistoia, Eichhornia, and Potamogetonaceae.
- 2. Primary Consumers:** The principal primary consumer is a sizable population of zooplanktons. Additionally, the main consumers in ponds are typically small herbivorous species including tadpoles, snails, beetles, small fish and aquatic animal larvae.
- 3. Secondary Consumers:** This group include huge animal species like crabs, large fish, water snakes, and frogs. The highest level of consumers may include mammals like kingfishers, water shrews, ducks, herons and water voles.
- 4. Decomposer:** it's a diverse collection of fungi and bacteria that feeds on the decomposing and decaying portions of aquatic animals.

ABIOTIC COMPONENTS OF THE POND ECOSYSTEM

- Aquatic organisms depend on the non-living elements of an ecosystem, or abiotic components, to survive. The abiotic elements of a pond's ecosystem are as follows:
 1. **Light:** Light is a crucial abiotic element in phytoplankton photosynthetic activity. The deep region receives the least quantity of light, while the coastal zone receives the most.
 2. **Temperature:** As the pond gets deeper, less light enters it and the water's temperature drops accordingly
 3. **Dissolved Oxygen:** As we go from the surface of the pond down to its depth, the amount dissolved oxygen progressively drops. It is biggest in shallow water.

IMPORTANCE OF POND ECOSYSTEM

- The following highlights the significance of the pond ecosystem:
 1. By absorbing pollutants and heavy metals, certain aquatic plants contribute to better water quality.
 2. In addition to providing water, the pond ecology supports species outside of ponds.
 3. By absorbing nitrogen and phosphorus, shoreline plants contribute to the maintenance of the pond's oxygen level and inhibit the growth of algae. Furthermore, animal excrement that aquatic plants absorb reduces the amount of nutrients available to plants, which prevents algae from growing.
 4. The distribution of animal species in a pond is determined by stratification within the ecosystem. This helps lessen interspecies competition to some extent.

THANK YOU