

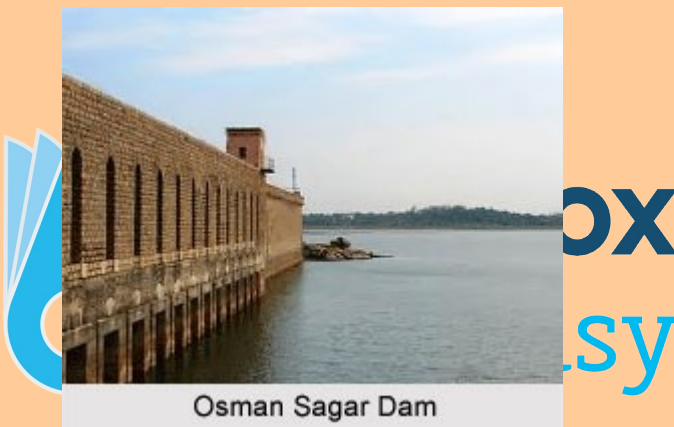
CHAPTER 09

Adaptations in Different Ecosystem

Fresh water ecosystems:

- Fresh water ecosystems are stagnant water types as well as running water types.

Osman Sagar



Durgam Cheruvu



Shamirpet Lake



Waddepally Lake



Laknavaram Cheruvu of Mulugu



Palair Cheruvu of Khammam



Koil Sagar in Mahabubnagar



Ali Sagar Lake in Nizamabad etc. are fresh water ecosystems in Telangana state.



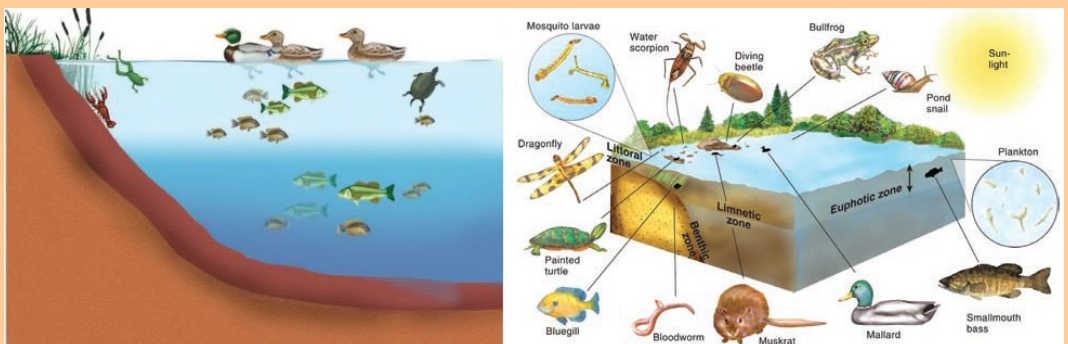
We have already learned about the three zones present in marine ecosystem.

Zones in a freshwater ecosystem on the basis of availability of light:

Let us study the three zones present in fresh water ecosystem on the basis of light penetration.

Littoral zone:

It is the shallow zone near the shore. The water near the shore is usually muddy or turbid.



It is the topmost and warmest zone at the edge of the water body.

It is home to Snails, Clams, Insects, Several crustaceans, Fishes, Amphibians and the eggs and larvae of Dragonflies etc.

Organisms of this zone are fast swimmers, with well-developed sight.

They have dull and greyish bodies. It is the zone of

High photosynthetic activity.

Plants like Mosses, Water lily, Vallisneria, Hydrilla etc. are found here along with several types of algae.

Predators of this zone are Tortoise, Snakes and Ducks.

Limnetic zone:

It is the open water zone at the top of the water body and receives a good deal of light.

This zone contains a variety of freshwater fish with bright shiny, greyish or silver black scales that help them to merge with the surroundings.

Transparent or whitish-bodied crustaceans like Daphnia, Cyclops, and small shrimps are also found in this zone.

There are different types of floating plants like water hyacinth, Wolffia, Pistia along with a variety of algae.

Photosynthetic activity is highest here. Both littoral and limnetic zones are photic zones.

Profundal zone:

It is dimly lit and cold. Mostly heterotrophs and saprophytes, which are microbes that decompose dead

organisms, are found in this region animals, that live here is called bottom dwellers.

They are mostly scavengers and predators.

Examples: Crustaceans, Crabs, Fishes like Eels and Glossogobius (Isika dondu), Snails, Turtles etc.





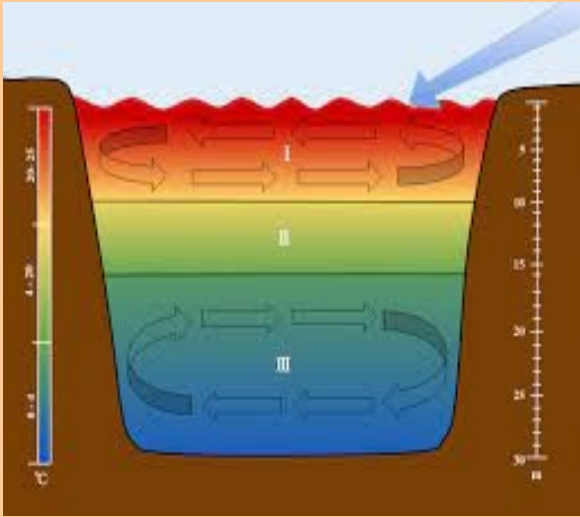
They adapt themselves by feeding on dead animals that settle down.

Many kinds of bacteria thrive here that help in decomposing the dead organisms.

Mud of the bottom floor, tiny particles of dead and decaying matter of plants and animal bodies make the water very turbid. Hence the bottom dwellers, rely mostly on smell and auditory (related to hearing) senses rather than vision to acquire their food.

Abyssal zone, which is a dark zone of marine ecosystem, is absent in freshwater ecosystem.

The surface layers in the lake ecosystem gets heated while the deeper layers remain cool during daytime. Often some organisms migrate to deeper layers during the day and reach the surface layers during nighttime when it cools down.



Other organisms found in lake:

Mammals like Badgers (Otters) live near water and are capable of swimming to catch their main food source, particularly fish.



Sea Otter

Amphibians and reptiles like Toads, Frogs, Alligators, Crocodiles and Salamanders start life underwater as eggs and tadpoles, and then move to ground as adults.

Insects such as Skaters, Water beetles, Mosquitoes

and Dragonflies can swim over the surface of ponds, playing a critical role in the food supply for other animals.

Many species of Ducks and Cranes also reside near the lake ecosystem feeding on a number of different food including fish.

Ducks and similar organisms living near the lake ecosystem often have webbed feet.

They help them to adapt to conditions on land as well as in water. Webbed feet and streamlined bodies have enabled them to be good swimmers.

Wading birds such as Herons and Egrets, which have long thin legs, which helps them to wander through the mud shallows searching for insects.

