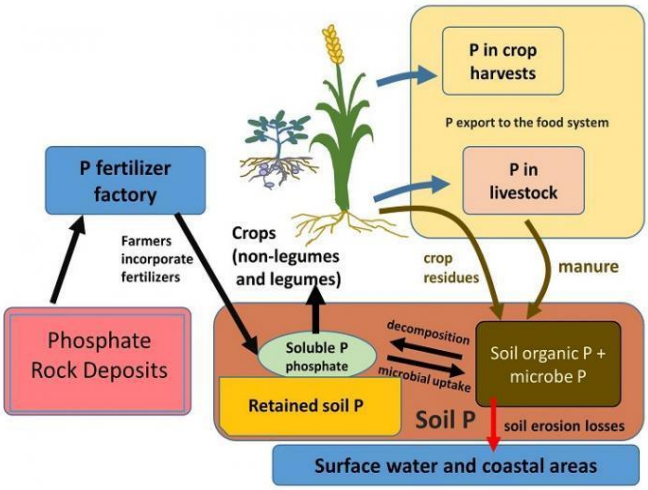


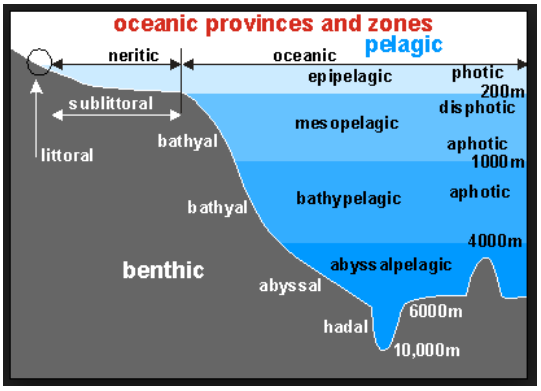
Aquatic Ecosystem

Ecosystem consisting of water as the main habitat are known as aquatic ecosystem

Classification Based on **Salt Concentration**:

1. **Freshwater Ecosystem:** 5 ppt (Lakes, ponds, springs, streams, rivers).
2. **Marine Ecosystem:** Equals to sea level; Approx. 35 ppt (Ocean).
3. **Brackish Water Ecosystem:** 5-35 ppt; (Estuaries, Salt marshes, mangrove swamps).

Zones of Aquatic ecosystem



Aquatic Organisms:

Classification on **Zone of occurrence** and their **ability to cross these zones,**

1. Neuston: That rest or swim on the surface e.g. water striders.

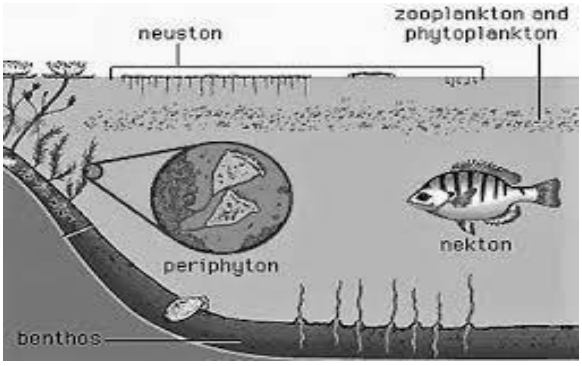
2. Periphyton: That are attached or clinging to other plants or any other surface. e.g. Algae

3. Plankton: That float on the surface of the waters e.g. phytoplankton like algae and zooplankton like rotifers.

4. Nekton: That swim on the surface e.g. fish

5. Benthos: That are attached to bottom sediments e.g. sea grass

Fig: Different aquatic organisms and their zones of occurrence.



Factors limiting the productivity of Aquatic Life: Sunlight, Oxygen, Transparency, Temperature.

Sunlight:

1. **Photic Zone:**

Layer where sunlight penetrates and **photosynthesis** can take place.

2. **Aphotic Zone:**

Layer where sunlight penetration is too low and no photosynthesis but **respiration** takes place.

Dissolved Oxygen:

- Fresh water - 10 ppm. Oxygen enters through air water interface, and photosynthesis.
- It is influenced by temperature - warm water - Less O_2 and vice versa.
- If it falls to 5 ppm or below then organisms will die.

Transparency:

Turbidity because of suspended particulate matter like clay or silt can limit productivity of life.

Temperature:

Water has higher specific heat than air. So temperature change will be slower. Temperature fluctuation can be fatal to aquatic organisms.