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| Lakes | Physical: standing water; thermocline within; layeringChemical: oligotrophic (high oxygen, low nutrient) and eutrophic (low oxygen, high nutrient)Geologic: oligotrophic generally deeperAutotrophs: littoral zone (rooted, floating aquatic plants) and limnetic zone (phytoplankton)Animals: fish, limnetic zone (zooplankton), benthic zone (invertebrates)Human Impact: runoff and nutrient enrichment |
| Wetlands | Physical: land with frequent or constant inundationChemical: high photosynthetic activity, high decomposition, low dissolved oxygen, natural filtrationGeologic: basin (shallow), riverine (on river and stream banks), fringe (on sea and lake coasts) Autotrophs: high productivity; pond lillies, cattails, spruce (periodic anaerobic adaptations)Animals: invertebrates, birds, diverse herbivores/carnivoresHuman Impact: draining/filling |
| Streams and Rivers | Physical: vertical stratification; speed and volume of water flowChemical: salt/nutrient increases from headwater to mouthGeologic: rocky bottom to wide/meandering to silty sedimentationAutotrophs: phytoplankton; aquatic plantsAnimals: fishes; invertebratesHuman Impact: pollution, damming, flooding |
| Estuaries | Physical: between river and sea; seawater underneath, river water on topChemical: nutrient rich; varying salinityGeologic: networked structureAutotrophs: phytoplankton, salt-marsh grasses, algaeAnimals: fish, crabs, breeding groundHuman Impact: filling, dredging, pollution |
| Intertidal Zone | Physical: periodically submerged and resurfaced; more variation in upper zonesChemical: high oxygen and nutrient levelsGeologic: rocky and sandy substrate materialAutotrophs: high algae diversityAnimals: crustaceans, worms, clams, anemones with substrate attachment adaptationsHuman Impact: oil pollution |
| Oceanic Pelagic Zone | Physical: open water with ocean current mixingChemical: high oxygen, low nutrients, thermoclines with turnoverGeologic: deep and covers 75% of earth's surfaceAutotrophs: phytoplanktonAnimals: zooplankton, free swimming animalsHuman Impact: overfishing, pollution |
| Coral Reefs | Physical: calcium carbonate skeleton of corals; mostly in shallow waterChemical: need high oxygen levelsGeologic: coral attaches to hard substrate on island coast - fringing reef - barrier reef - coral atollAutotrophs: unicellular algae in tissue of coral, red/green algaeAnimals: corals, high fish/invertebrate diversityHuman Impact: collection, pollution, disturbance |
| Marine Benthic Zone | Physical: seafloor by coast (neretic) and offshore (pelagic); no sunlight except neretic; low temperature; high pressure (especially abyssal zone)Chemical: sufficient oxygenGeologic: mostly soft sediment on ocean floorAutotrophs: few photosynthetic organisms (barely light); chemoautotrophic prokaryotes (in deep sea hydrothermal vents that oxidize H2S)Animals: invertebrates, fish (neretic); giant tube worms (deep sea hydrothermal vents); eat organic matter raining down from aboveHuman Impact: overfishing, dumping |