Aquatic Biomes
Part 2

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Kelp forest



- Area of ocean near coast made of giant kelp
- Sea Otter is keystone species
- Supplies shelter and food or many organisms
- Absorbs wave energy
- Kelp is human food source

- Picture credit: NOAA

What is an estuary?

- Coastal Wetland where a river meets the ocean.
- Highly adapted species
- Brackish water: part salty and part fresh



- Picture credit: NOAA

How do Tides affect estuaries?

- Tides are caused by the gravitational pull of the moon.
- High Tide water: Temp decreases. Salinity and dissolved oxygen increase
- Low Tide water: Temp increases, salinity and dissolved oxygen decrease

- Picture credit: NOAA



Salt Marsh



- Located in temperate latitudes
- Salt-tolerant plants like eel grass
- High primary productivity

- Picture credit: NOAA



Mangrove forest

- Located in tropical and subtropical latitudes
- Roots provide habitat
- Salt-tolerant trees
- Half is destroyed-much for aquaculture (fish farming)

- Picture credit: USDA

Sea grass and eel grass



- Found in estuaries
- Adapted to more salinity than regular plants, but only brackish water
- Sea otters are keystone species in Eel grass ecosystems

- Picture credit: NPS

Estuaries as breeding grounds



- Estuaries are important breeding grounds for fish, birds, crustaceans etc.
- Commercial fisheries depend on estuaries to breed fish to catch and sell.

Picture credit: NOAA

High productivity



- Estuaries have a large biomass of producers-plants, algae and phytoplankton
- Rivers bring nutrients (NPK) which increase photosynthesis
- High decomposition = more nutrients

- Picture credit: NOAA

Ecosystem services

- Estuaries build land through sediment transport which buffers storms and hurricanes and saves money
- Cleans water from pollution before river enters the ocean
- Tourism
- Fisheries increase catch and profit
- Cultural value for reducing stress which saves medical costs

- Picture credit: NOAA



Threats to Estuaries

- Eutrophication from nutrient run-off
- Deforestation = soil erosion and sediment pollution
- Drained and filled for agriculture and development
- Dams upstream on rivers prevent sediments and nutrients from entering estuary
- Water pollution
- River water diverted into aqueducts