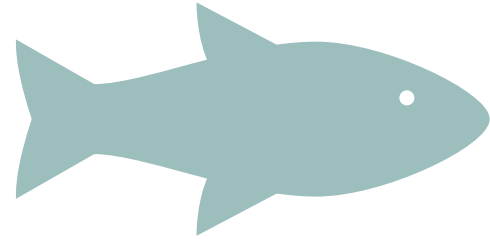




QUESTION OF THE DAY

What are the 2 types of aquatic ecosystems?



AQUATIC ECOSYSTEMS

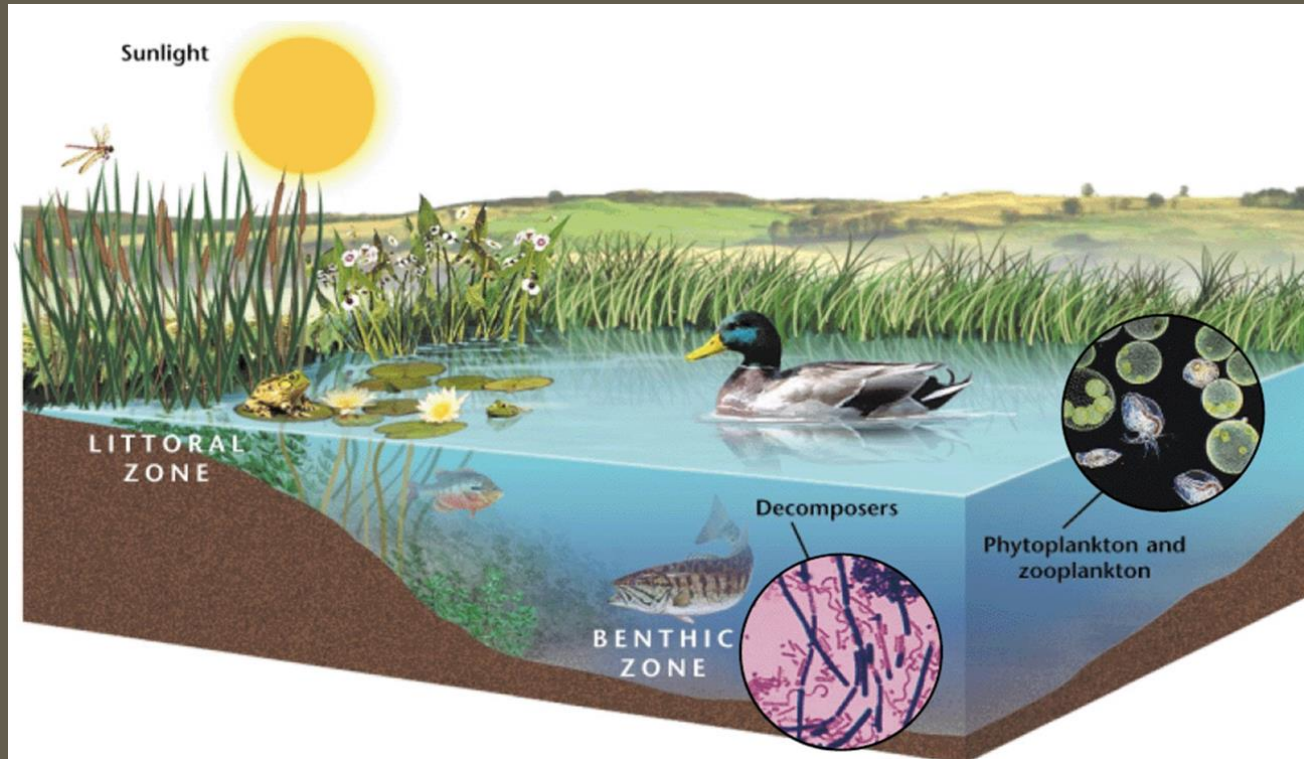


FRESHWATER ECOSYSTEMS

Freshwater ecosystems include...

1. Lakes and Ponds
2. Freshwater Wetlands
 - Swamps
 - Marshes
3. Rivers

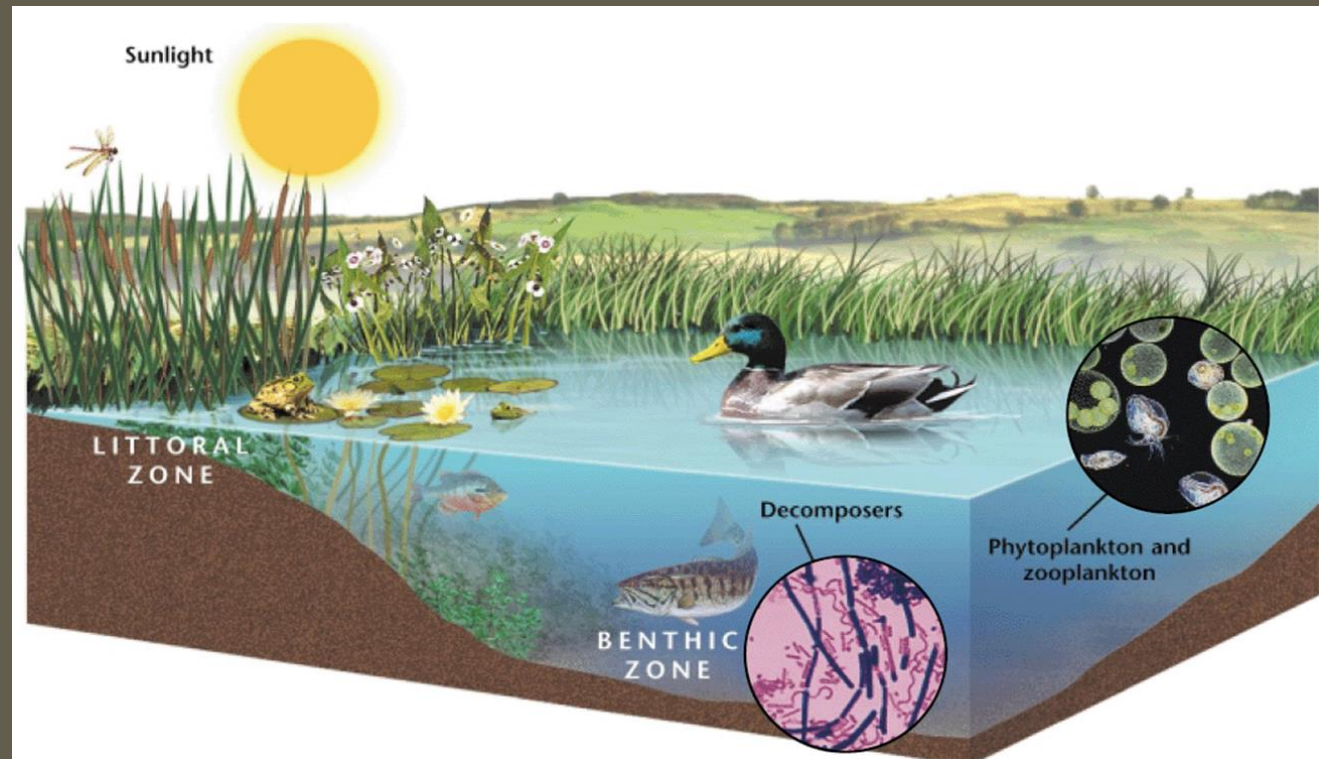
LAKES AND PONDS



- Lakes and ponds can be structured into horizontal and vertical zones
- The nutrient rich littoral zone is a shallow zone in a freshwater habitat where light reaches the bottom and nurtures plants and aquatic life is diverse and abundant.
- Farther from the shore, in the open water limnetic zone, there are no rooted plants

BENTHIC ZONE

- Some bodies of fresh water have areas too deep for photosynthesis.
- In these deep areas, bacteria and other decomposers live on dead plants and animals that drift down from above
- The **benthic zone** is the region near the bottom of a pond or lake which is inhabited by decomposers, insect larvae, and clams.





FRESHWATER WETLANDS

- Freshwater wetlands are areas of land , with special soils and plants, that are covered with freshwater for at least part of the year.
- There are 2 main types: Marshes (nonwoody) and Swamps (woody)
- Wetlands perform several important environmental functions
 - 1. Act like filters or sponges that absorb and remove pollutants from the water.**
 - 2. Control flooding by absorbing extra water when rivers overflow.**
 - 3. Provide a home and food for wildlife**
- The Florida Everglades is the largest freshwater wetland in the United States

A photograph of a river flowing through a rocky, forested landscape. The river is in the foreground, with a rocky bank on the left and a rocky riverbed. The background is a dense forest of green trees. The word "RIVERS" is written in white capital letters inside a white rectangular box in the upper center of the image.

RIVERS

- Rivers can originate from underground springs, snow melt in mountains, or where smaller streams merge together.
- At its headwaters, a river is usually cold and full of oxygen and runs swiftly through a shallow riverbed.
- Further along, it becomes warmer, wider, and slower, containing more vegetation and less oxygen.
- A river changes with the **land and climate**.



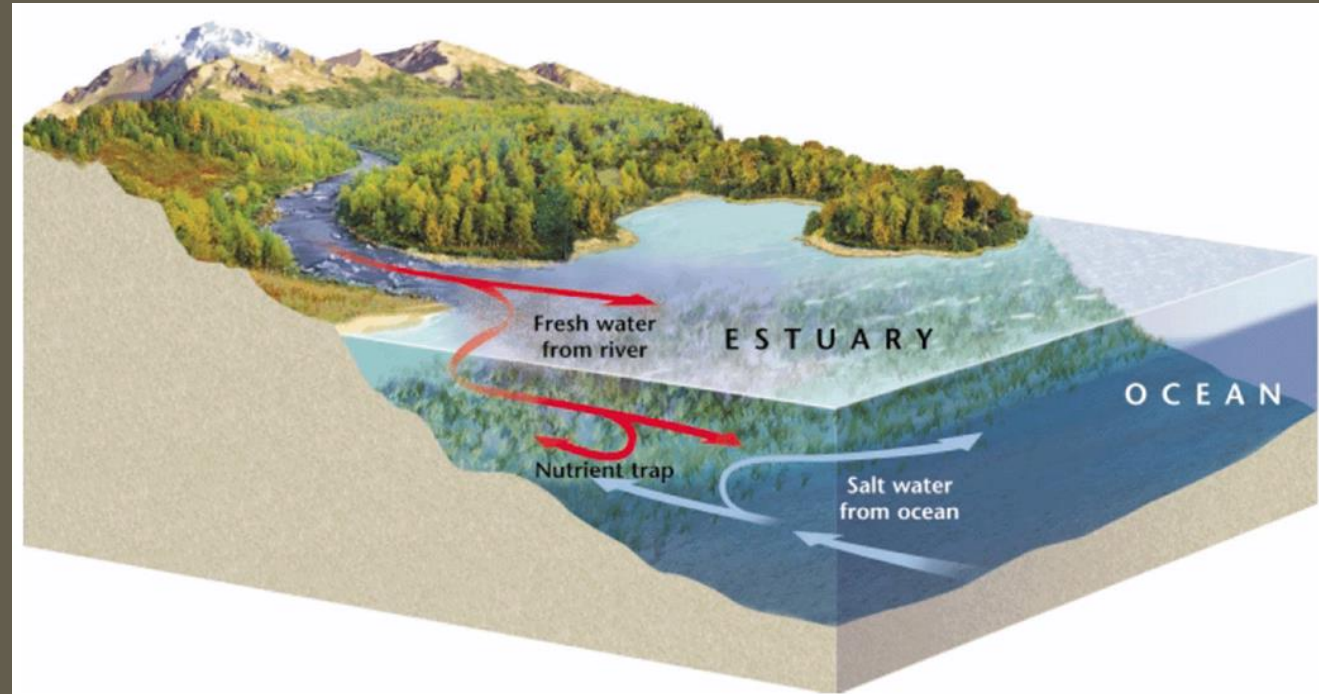
MARINE (SALTWATER) ECOSYSTEMS

Marine ecosystems include...

1. Coastal Wetlands
 - Estuaries
 - Salt Marshes
 - Mangrove Swamps
 - Rocky and Sandy Shores
2. Coral Reefs
3. Oceans
4. The Arctic and Antarctic

ESTUARIES

- Many coastal wetlands form estuaries. An estuary is an area in which fresh water from a river mixes with salt water from the ocean.
- As the two bodies of water meet, currents form and cause mineral-rich mud and dissolved nutrients to fall to the bottom.
- Estuaries tend to be very productive ecosystems because they constantly receive nutrients from the river while the surrounding land protects estuaries from the harsh force of ocean waves.



A close-up photograph of a horseshoe crab resting on a sandy beach. The crab's large, reddish-brown carapace is the central focus, showing its characteristic shape and texture. The background is a soft-focus view of the sand and the crab's legs extending into the distance.

PLANTS AND ANIMALS OF ESTUARIES

- For weeks each spring, horseshoe crabs crawl out of the ocean and onto the beaches in the Delaware Bay. In the shallow areas along the shore, the crabs mate and lay billions of eggs. Many migrating shorebirds depend on these eggs for food.
- Estuaries support many marine organisms because estuaries receive plenty of light for photosynthesis and abundant nutrients for plants and animals.
- Organisms that live in estuaries are able to tolerate variations in salinity because the salt content of the water varies as fresh water and salt water mix when tides go in and out.

MANGROVE SWAMPS

- Mangroves are several species of small trees adapted for growing in shallow salt water. Most mangroves have wide, above-ground root systems for support.
- Mangrove swamps are typically found in tropical and subtropical zones.
- Mangrove swamps help to protect the coastline from erosion and reduce the damage from storms. They also provide habitat for about 2,000 animal species.



CORAL REEFS

- Coral reefs are limestone ridges built by tiny coral animals called *coral polyps* and the algae that live inside them.
- Coral reefs are among the most diverse ecosystems on Earth.
- Corals are predators that use stinging tentacles to capture small animals that float or swim close to the reef.
- <https://www.youtube.com/watch?v=ZiULxLLP32s>



CORAL REEFS IN DANGER

- Coral reefs are fragile ecosystems. If the surrounding water is too hot or cold for too long, or if it is too muddy, polluted, or high in nutrients, the algae that live in the corals will leave or die.
- As a result, the corals turn white, a condition called *coral bleaching*.
- Since the 20th century, bleaching events have been occurring more frequently, mainly due to human activities.
 - Climate change
 - Oil spills
 - Polluting Runoff
 - Overfishing

