Water Biomes

Water Biomes

- There are two different types of water biomes
    1) Marine Biomes
    2) Freshwater Biomes

- Water biomes are characterized by the type of water (salt or fresh) and how fast the water is moving.

Marine Biomes

- Almost 75% of the Earths surface is covered by water.
- 97% of the worlds water supply comes from Marine Biomes
- Some of the largest animals on earth inhabit them
- Marine ecosystems have salty water, which is the most impacted abiotic factor in these systems.

Marine Biomes

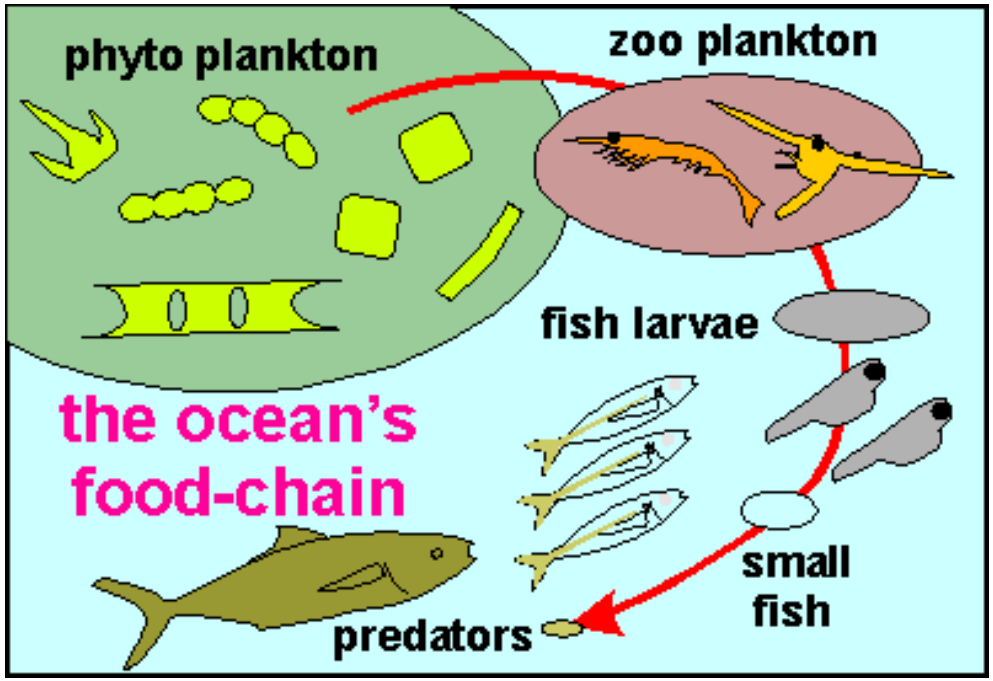
- Similar to land biomes, here are some abiotic factors that help shape marine biomes:

1) Temperature of the water
2) Amount of sunlight
3) Distance from land
4) Amount of salt

Marine Food Chains

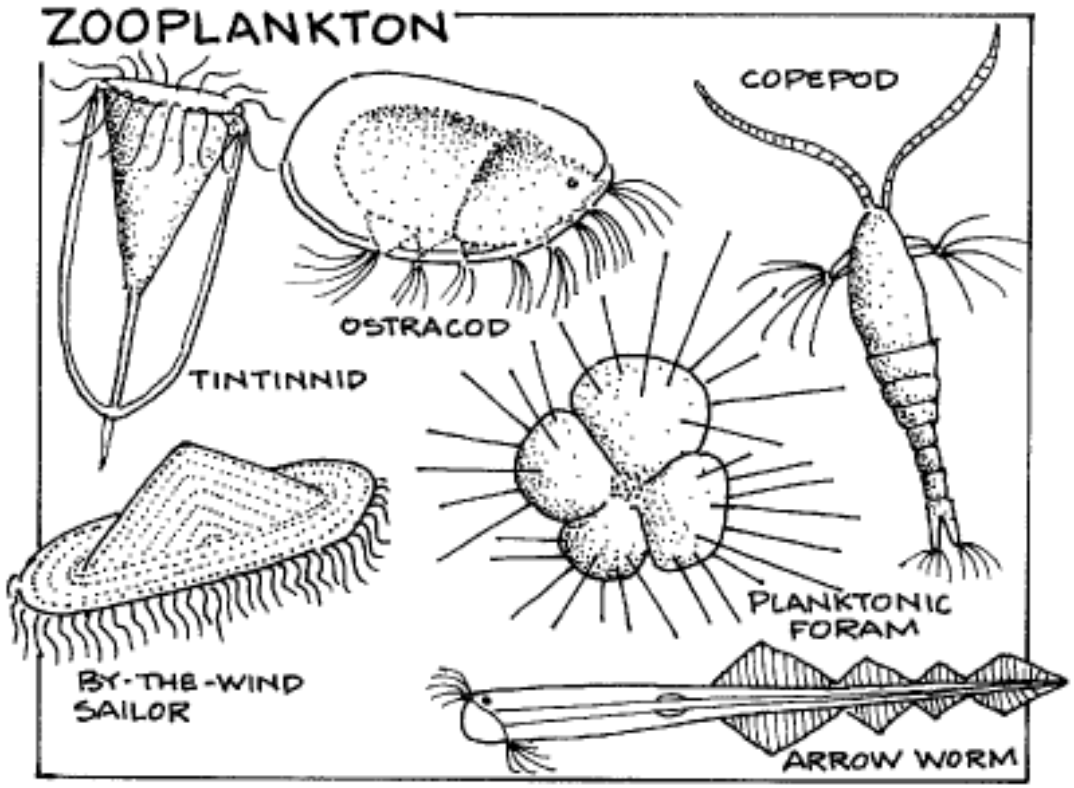
- Producers (can make own food) in marine biomes usually are at the top of the water where sunlight can reach.
- Phytoplankton- microscopic photosynthetic organisms

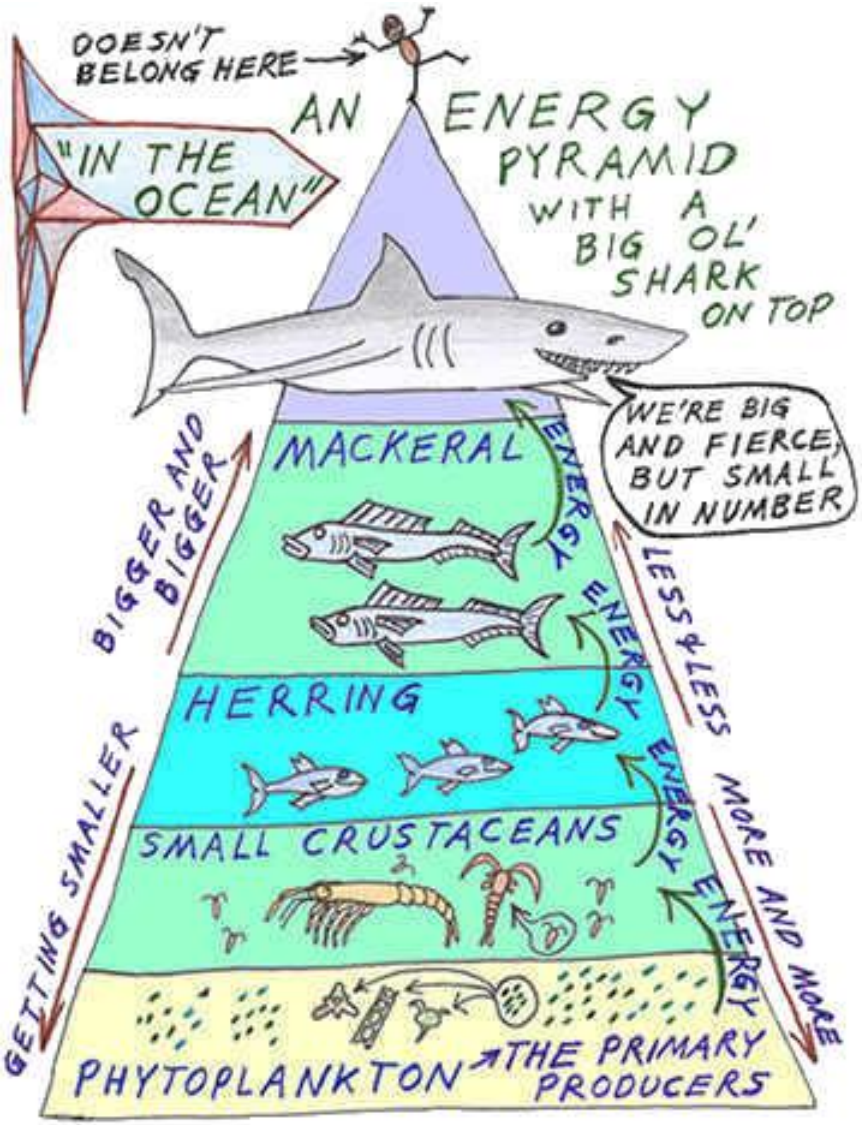
Here is phytoplankton starting the food chain

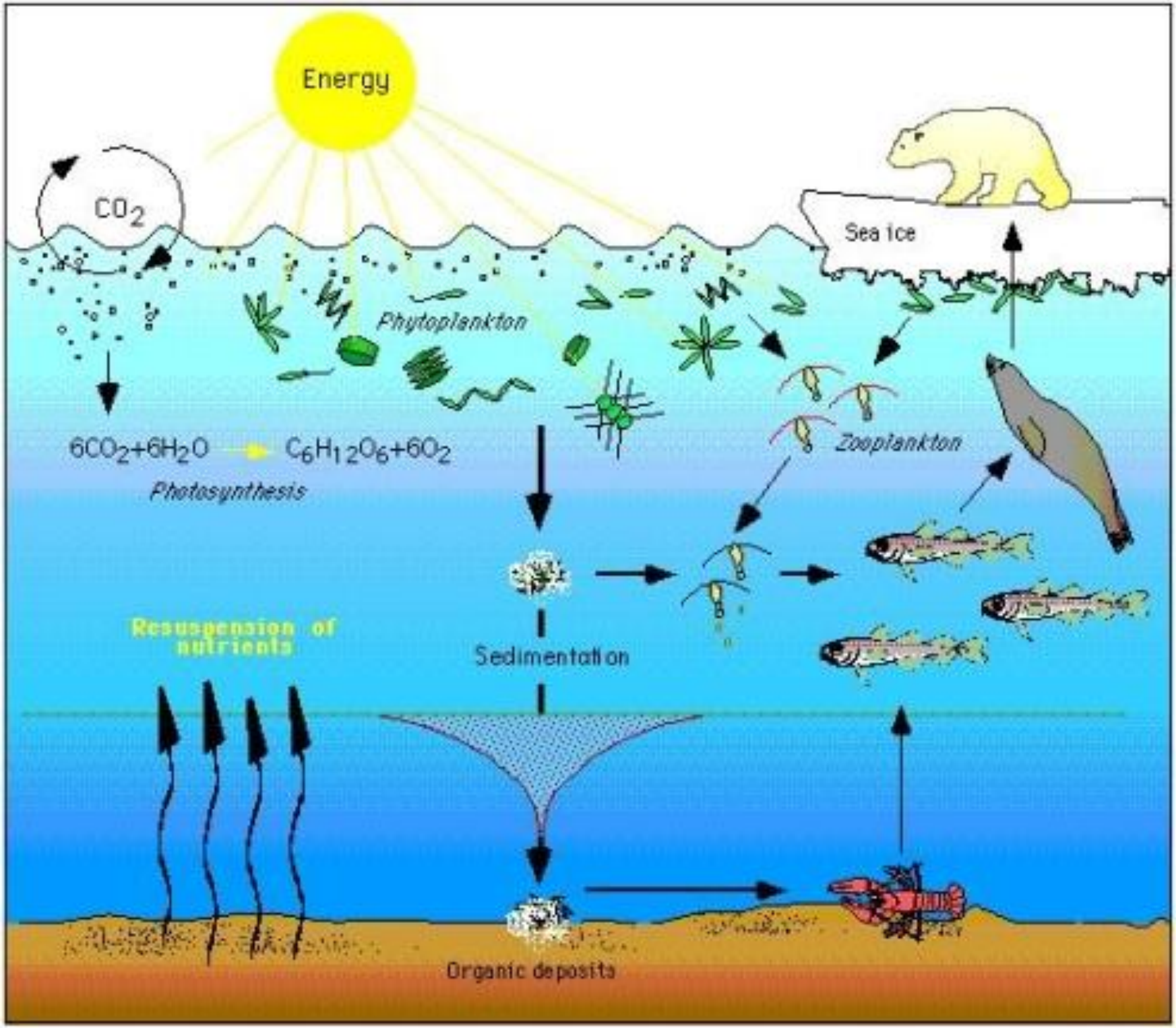


Marine Food Chains

- Zooplankton are very small animal-like protists which feed on phytoplankton



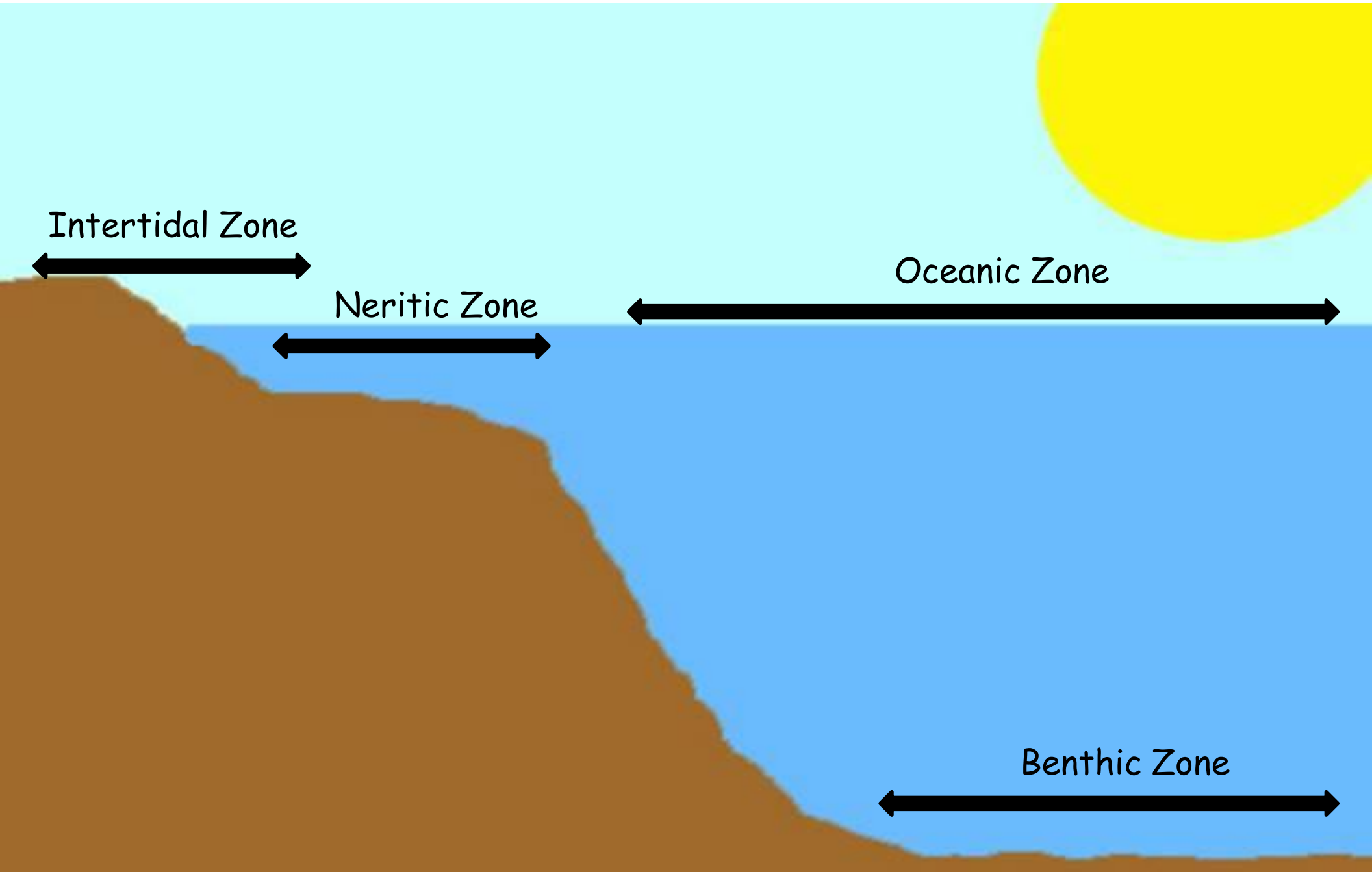




Drawn by Christopher Krembs

Zones of the Marine Biomes

Zones of the Ocean



A) Intertidal Zone


A purple ochre sea star which feeds on muscles, barnicles and snails of the tide pools. © TQ Team #C007506

- Area where the ocean meets the land.
- Above water when the tide is out and under water when the tide is in.
- Mud flats, rocky shores, and sandy beaches
- Sea grasses, snails, sea stars, crabs, birds, and clams are all common in the intertidal zone.

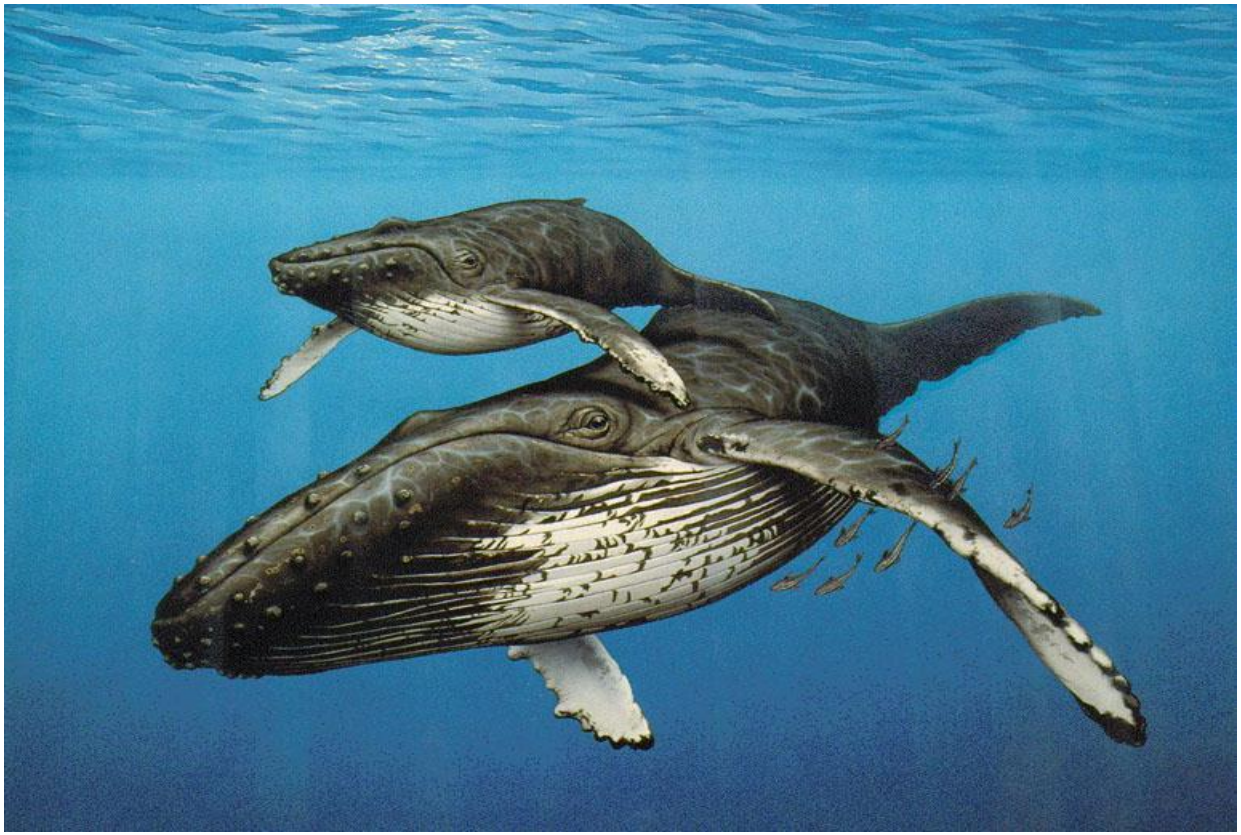
B) Neritic Zone

- Water gradually becomes deeper toward the edge of the continental shelf.
- Less than 200 meters in depth
- Receives a lot of sunlight

- Coral reefs- sea turtles, colorful fish, coral, sponges, and dolphins

C) Oceanic Zone

- Past the continental shelf
- To a depth about 200 meters
- No light penetrates so organisms rely on organic material that falls from the surface.

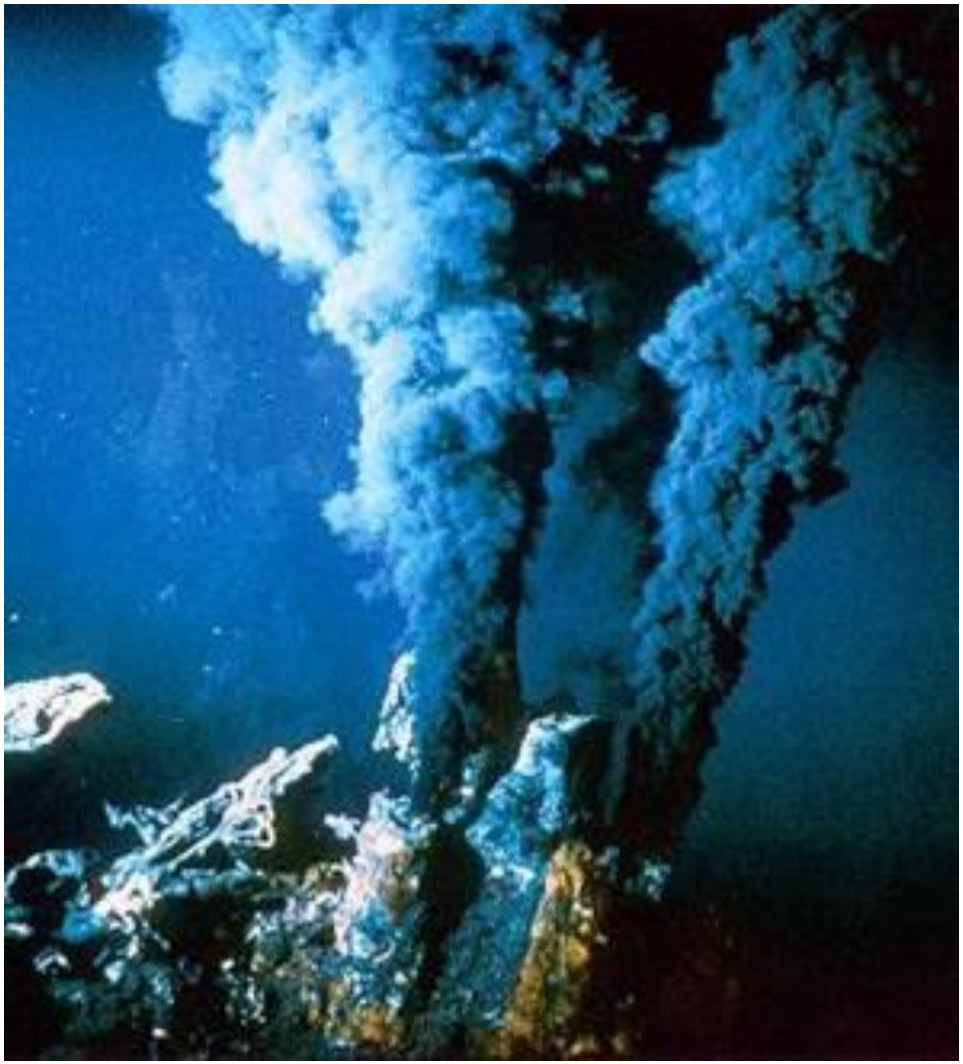


Oceanic Zone Continued

- Animals are adapted to survive in darkness and high pressure of deep water.
- Sharks, squids, whales, and fish.

D) Benthic Zone

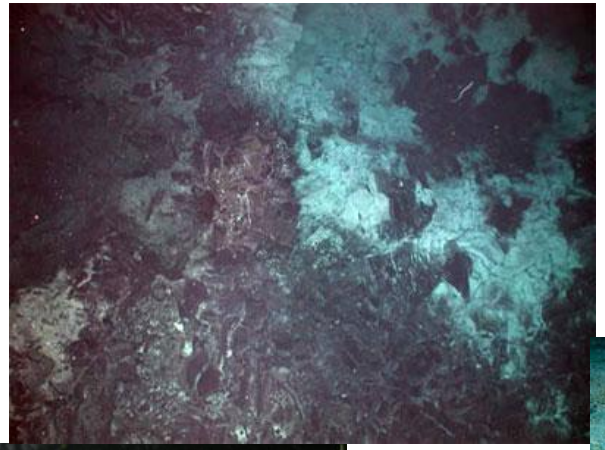
- The sea floor.
- Organisms mostly consume material that filters from above.
- Can have ocean vents where heat escapes through the cracks of Earth's crust.



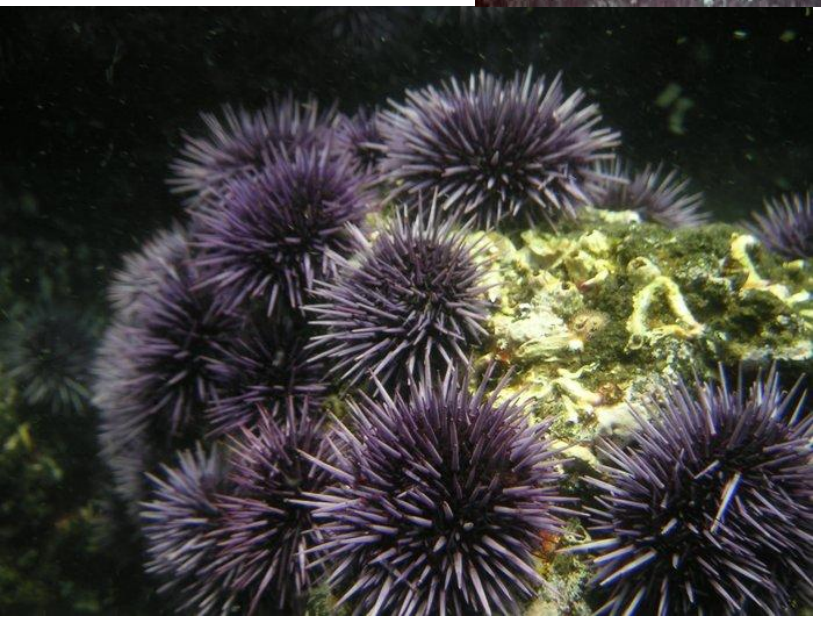
Hydrothermal Vent on the bottom of ocean

Benthic Zone Continued

- Worms, sea urchins, and bacteria live there.



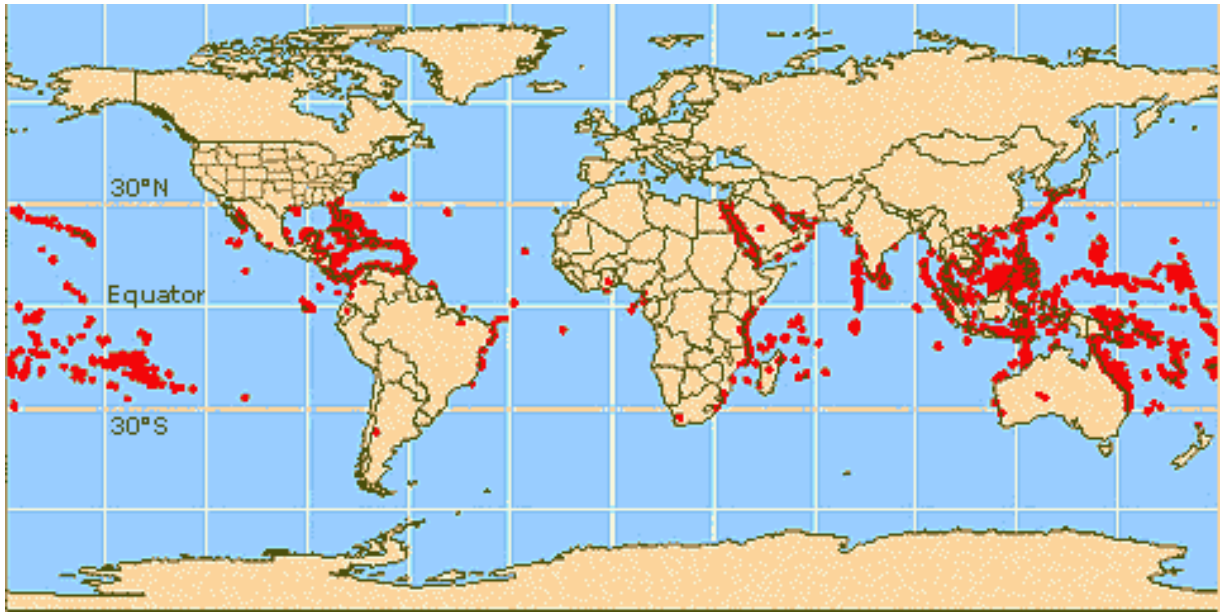
Bacteria around a vent



Sea Urchins

Sea Cucumber

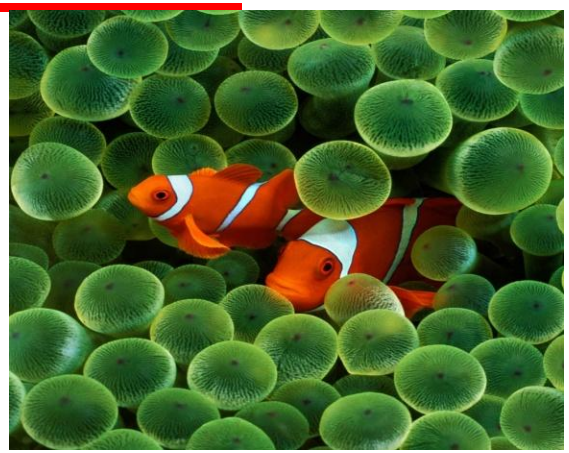
Coral Reefs



- Located near sunny, warm, tropical waters.
- Coral reefs are the most biologically diverse water biomes.
- Fluctuating temperatures and increase pollution can severely affect the health of coral reefs.

What is Coral?

- Coral- a rocklike structure of calcareous skeletons that is built up over thousands of years.
- Coral contains polyps that have small stinging cells.
- Belong to the Phylum Cnidaria.



Coral Reefs Continued

- Coral live in a close relationship with single-celled algae.
- Algae produce nutrients for coral and coral give algae a place to grow.

- Coral reef is the home to many different marine species.

The Future of Coral Reefs

- The two biggest challenges for coral reefs are pollution and dredging off the coast.
- Pollution causes bleaching of coral and can affect all the organisms around it.

Estuaries

- The area where freshwater from streams and rivers flows into the ocean.
- The salinity (amount of salt) in the water is controlled by the tide.
- Fresh water supplies nutrients to phytoplankton which support larger consumers.