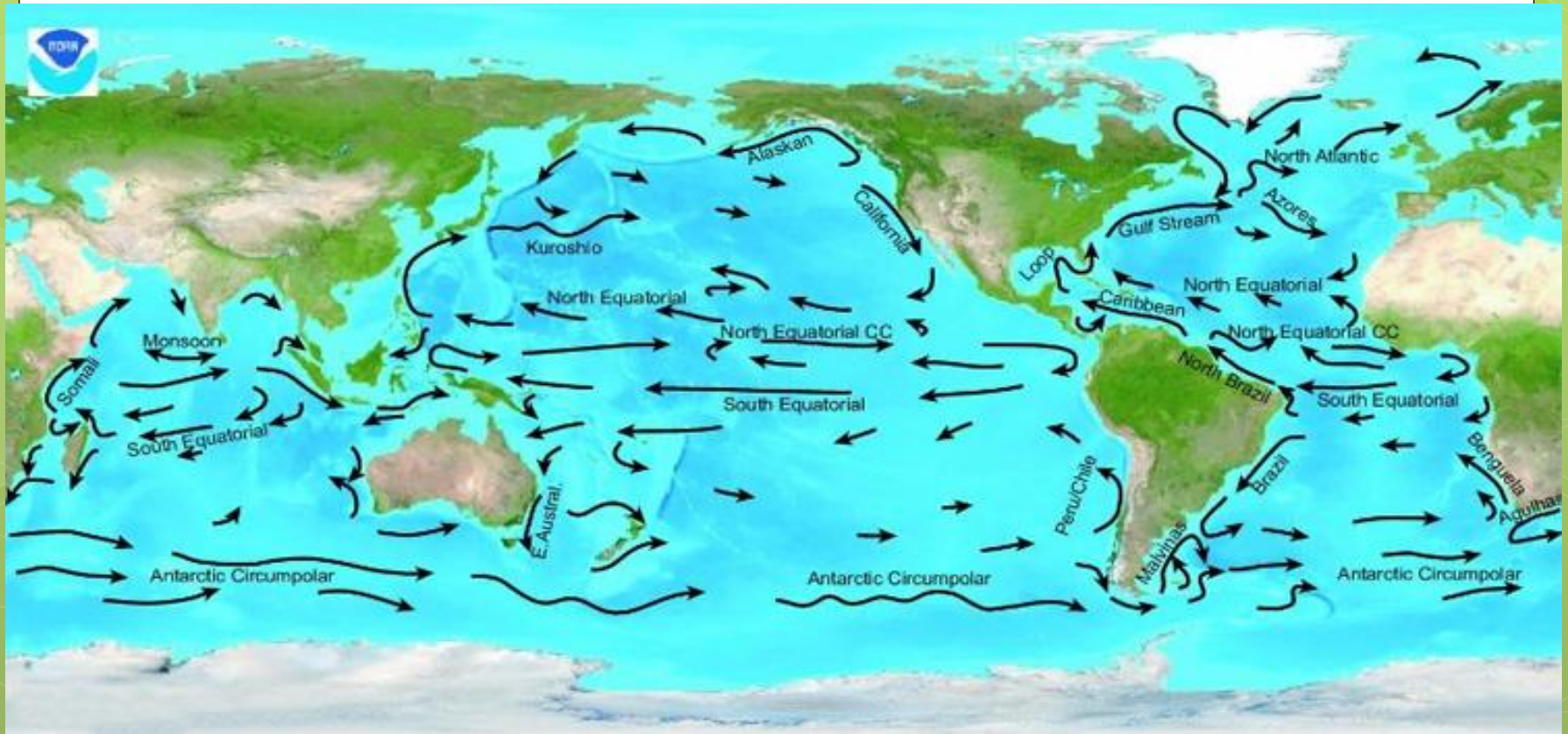




Ocean and Estuary Review

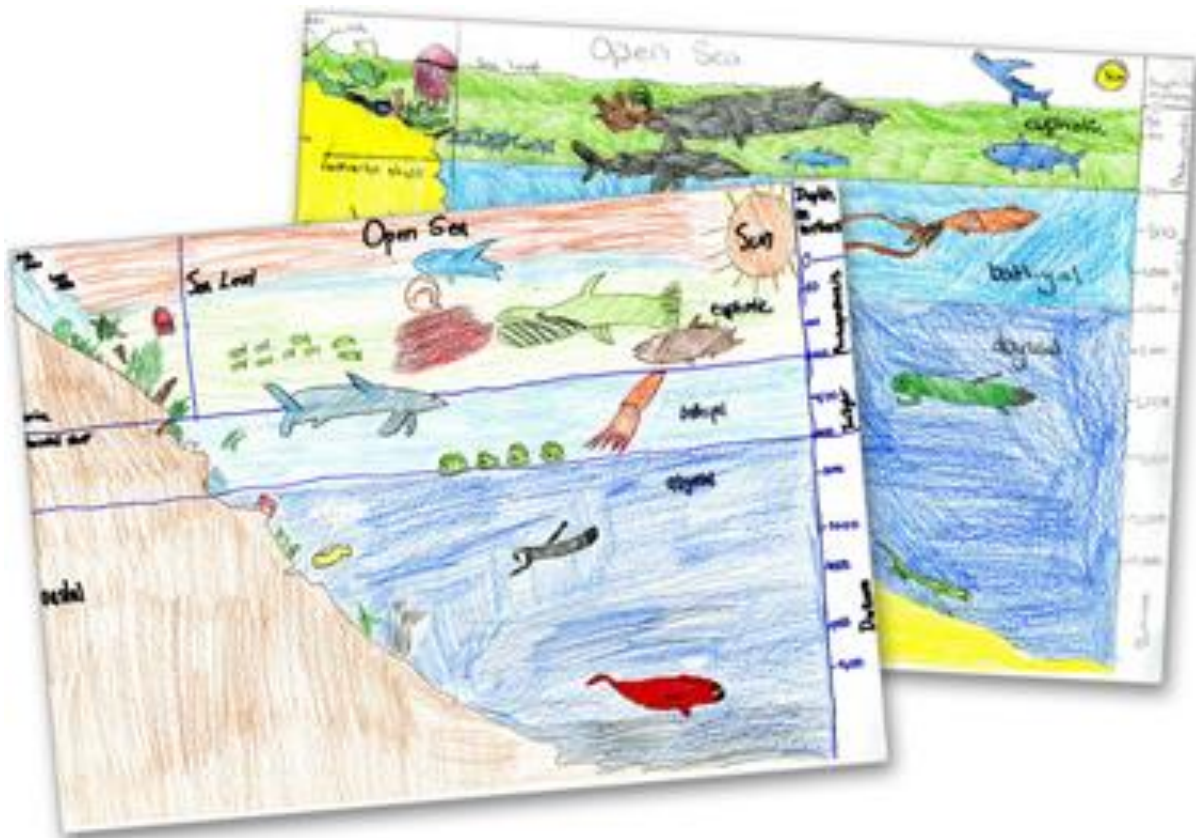
Oceans

- Ocean currents create our climate.
- Warm currents make warm rainy areas due to higher evaporation
- Colder currents bring colder climates with less rain.

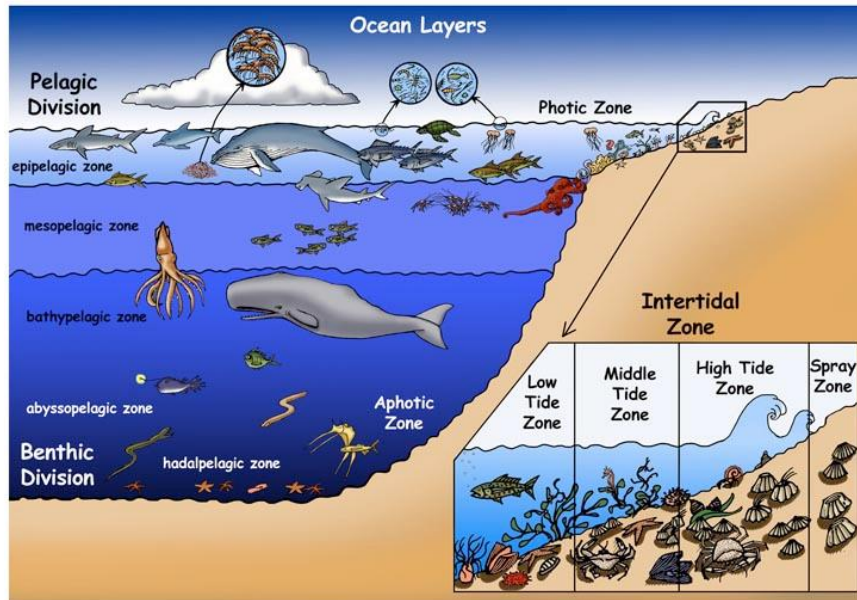


Oceans

- Are divided into “zones”



OCEANS



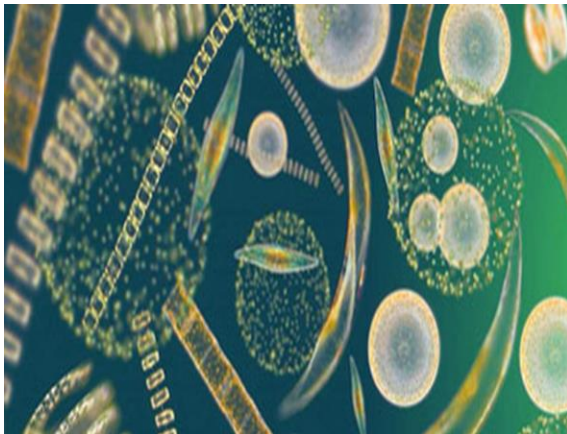
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- The top “zone” – around the surface of the water, holds the most life.
- Known as the surface zone.
- Organisms that need photosynthesis to survive live here.

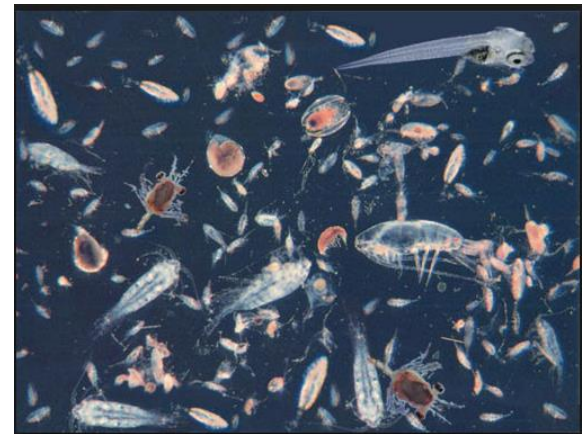
Phytoplankton vs Zooplankton

- Phytoplankton are plant-like organisms that photosynthesize near the ocean's surface.



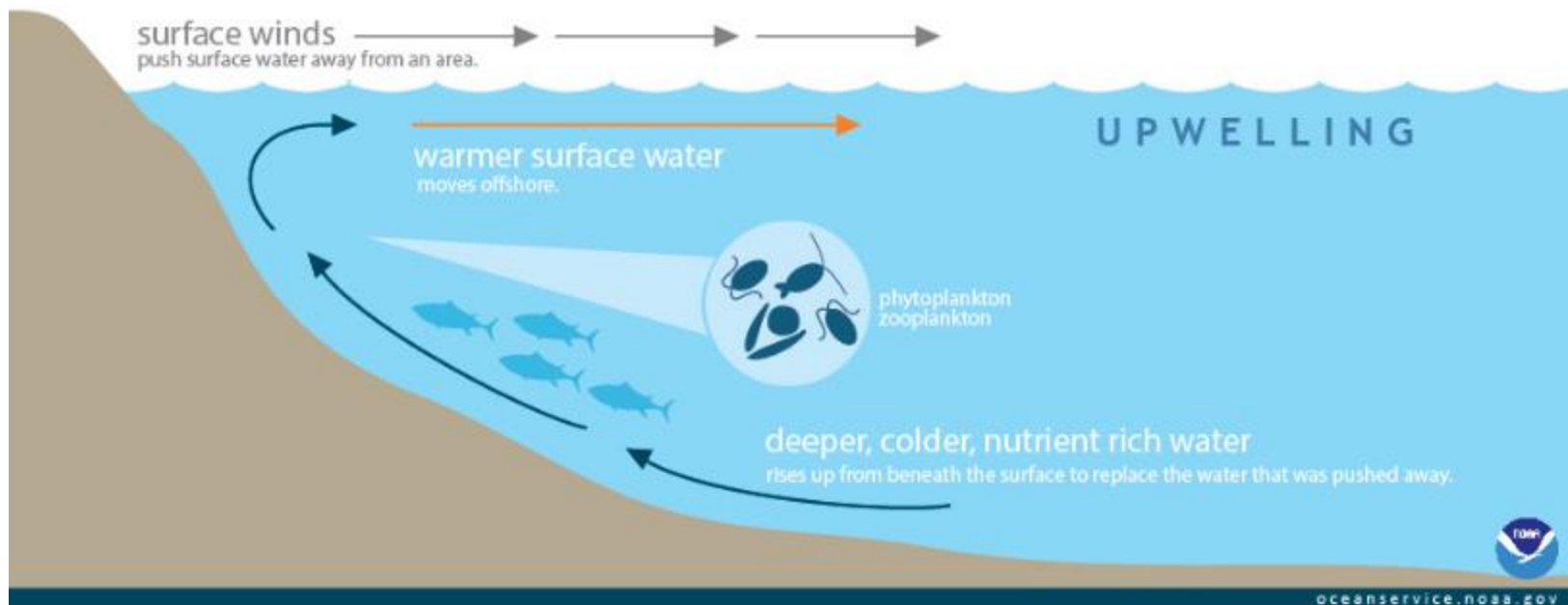
Is food
for...

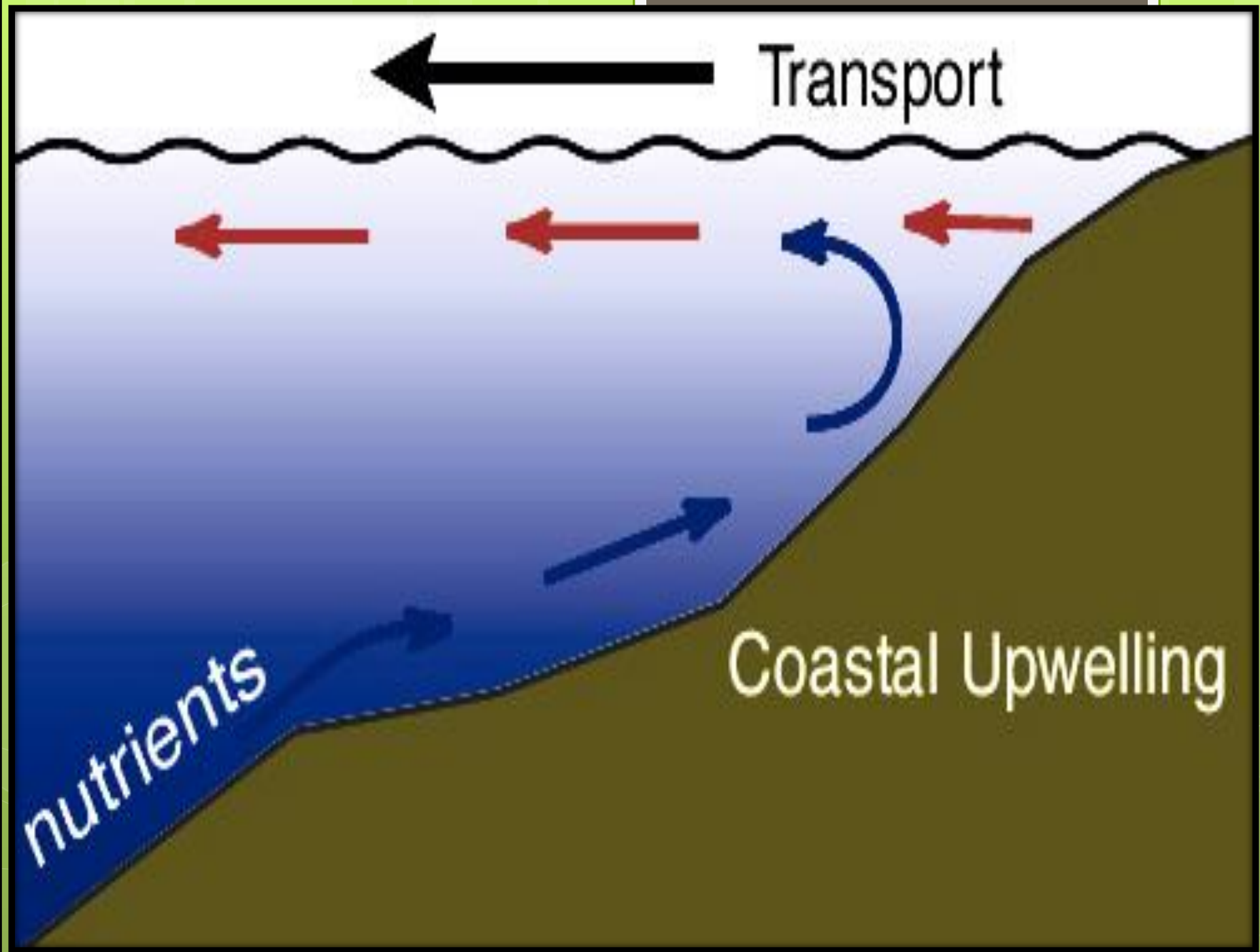
- Zooplankton are animal-like organisms that eat phytoplankton



Upwelling

- When cold, nutrient rich, water from the ocean floor rises to the surface.
- Carries with it tiny organisms (living things), nutrients, and minerals





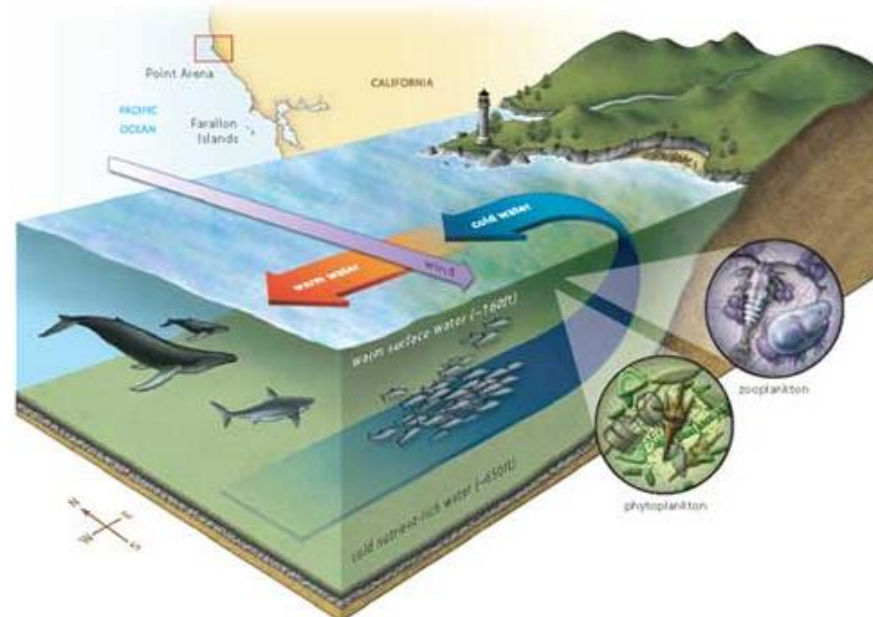
Upwelling

- When this happens many schools of fish will gather there to eat.
- This can result in a chain reaction – small fish come for the nutrients, bigger fish come to eat the smaller fish....



Upwelling

- With out any upwelling, the surface of the ocean would have a very small amount of nutrients (food) for living things.



Estuaries

- Created when a river meets an ocean
- A mixture of fresh and salt water
- The land is “soggy” and creates a special ecosystem that naturally cleans the water.
- The soil and plants act as sponges and absorb pollution as the water passes through.



ESTUARY



Try The Following Questions!

- Answer slides are at the end of the PPT

1. Which best explains how estuaries support plant and animal life?

- A. The dry land removes pollutants
- B. The water provides energy for growth
- C. Habitat areas provide nutrients and shelter
- D. Cold temperatures decrease dissolved oxygen

2. Which is least often used to study the deepest parts of the ocean floor?

Which is least often used to study the deepest parts of the ocean floor?

- A. sonar
- B. satellites
- C. scuba divers
- D. submersibles

3. Bluefin tuna has become the most popular fish for sushi in Japan. Which is most likely the impact this has had on the species?

- A. Bluefin numbers are decreasing.
- B. Bluefin numbers are increasing.
- C. All Bluefin are now raised on farms.
- D. There has been no impact on the species

4. What is the movement of cold, nutrient-rich waters from the bottom of the ocean, promoting algae growth?

- A. upwelling
- B. deposition
- C. precipitation
- D. eutrophication

5. Which best describes a significant benefit estuaries have on the environment?

- A. Wildlife helps protect the land from erosion in estuaries.
- B. Fishing industries thrive in and around tropical estuaries.
- C. Pollution is moved from rivers to oceans through estuaries.
- D. Coastal wetlands provide safe and ideal conditions to support animal habitats.

6. In which ocean zone is ocean temperature most affected by the weather?

- A. deep zone
- B. polar zone
- C. surface zone
- D. transition zone

7. Why are upwellings in the ocean essential for some organisms to survive?

- A. because many animals need low-tide conditions each day
- B. because currents carry predators away from the surface
- C. because the warm water kills bacteria before it can harm plankton
- D. because needed nutrients and dissolved gases are brought into new

8. Which best explains how the levels of nutrients, minerals, and dissolved gases in an estuary compare to those in surrounding bodies of water?

- A. The levels vary depending on the ocean that connects to it.
- B. The levels are lower in the estuary than in the river that connects to it.
- C. The levels vary depending on the river and the ocean that connect to it.
- D. The levels are higher in the estuary than in the ocean that connects to it.

9. Why are many fishing boats found near ocean upwellings?

- A. There is less vegetation there.
- B. The water is less turbulent there.
- C. Many marine species gather there to eat the nutrients brought to the surface.
- D. Upwellings are found in more shallow waters, so boats do not need deep anchorage

10. Which best describes the types of organisms found in estuaries?

- A. They can survive in salt water.
- B. They are only found in freshwater.
- C. They cannot tolerate brackish water.
- D. They tolerate both freshwater and salt water.

11. A cargo ship in the ocean spills thousands of cans of soda off the ship. Which marine ecosystem will primarily be disturbed by this spill?

- A. Estuary
- B. Coral reef
- C. Surface zone
- D. Hydrothermal vent

12. In which part of the ocean do the greatest number of organisms live?

- A. in the deep zone to escape predators
- B. near the shore to burrow in the sand
- C. close to the surface to be near the largest food source
- D. in the open ocean to regulate their bodies in cooler temperatures

13. Which organism is at the bottom of a marine food web?

- A. crab
- B. phytoplankton
- C. whale
- D. zooplankton

14. What causes upwelling in the oceans?

- A. Coral reef construction
- B. Photosynthesis reactions
- C. Winds and ocean currents
- D. Animal migration patterns

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13. Which organism is at the bottom of a marine food web?

- A. Crab
- **B. Phytoplankton (plant-like organisms, make food from sunlight)**
- C. Whale
- D. Zooplankton (animal-like organisms, eat phytoplankton)
- *Bottom of a food chain refers to the organisms that make the food, the producers.*

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