Standard 1 (pink)
Oceanography

Chapter 19 Section 1
Chapter 20 Section 1

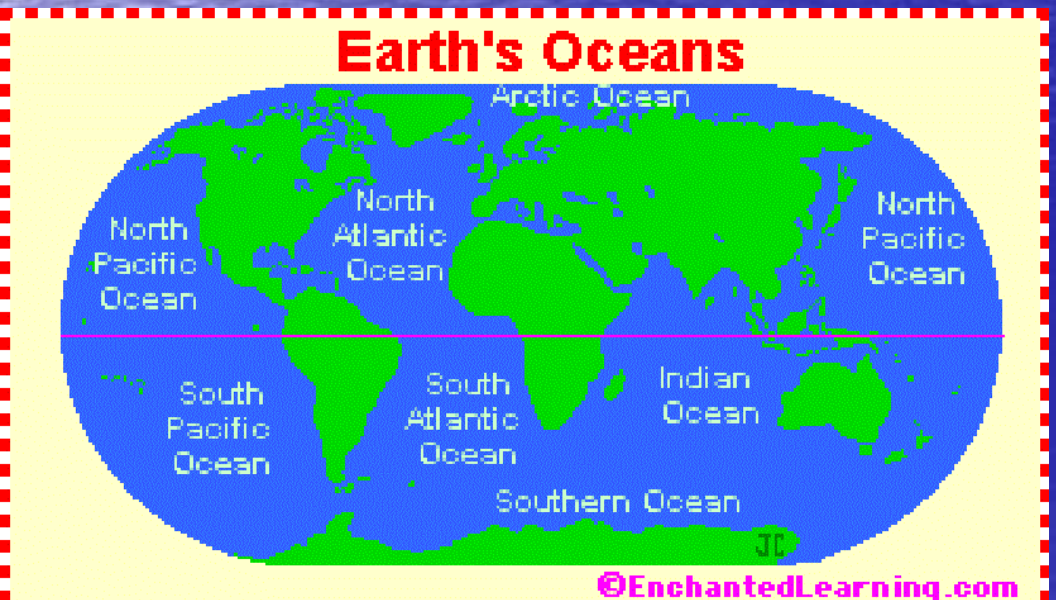
Oceanography and Properties of Ocean Water

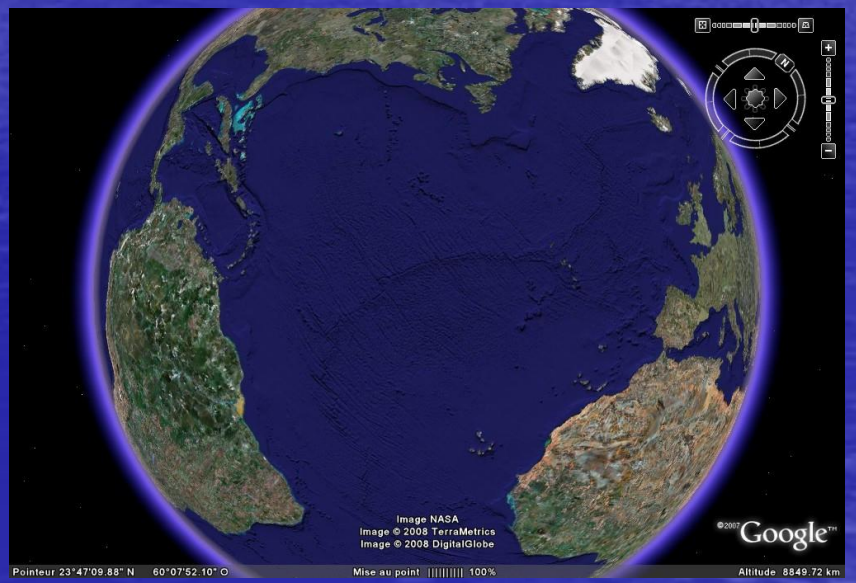
1

- The body of salt water covering nearly three-quarters of the Earth's surface is called the
  - global ocean.

2 How many of the known planets have a cover of liquid water similar to the Earth?

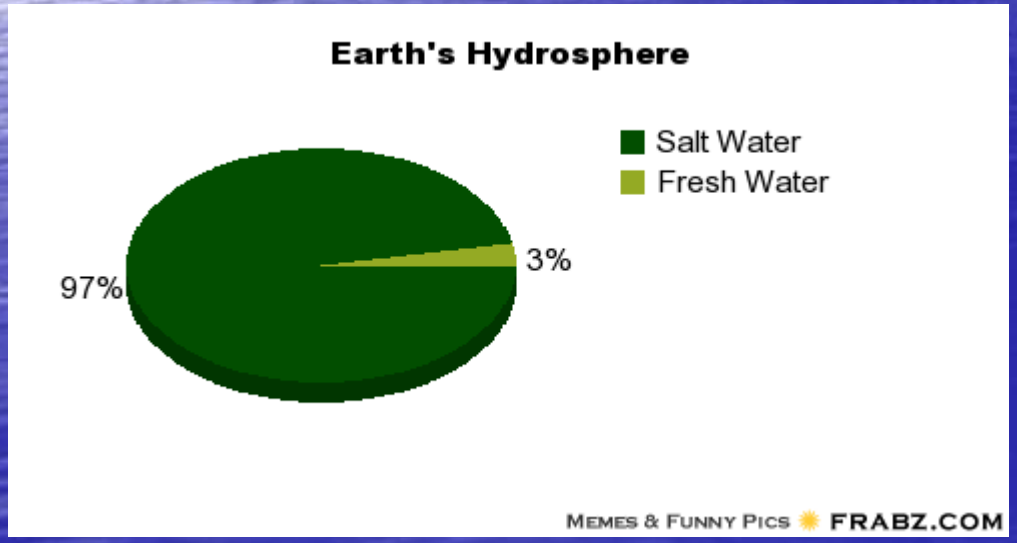
– none

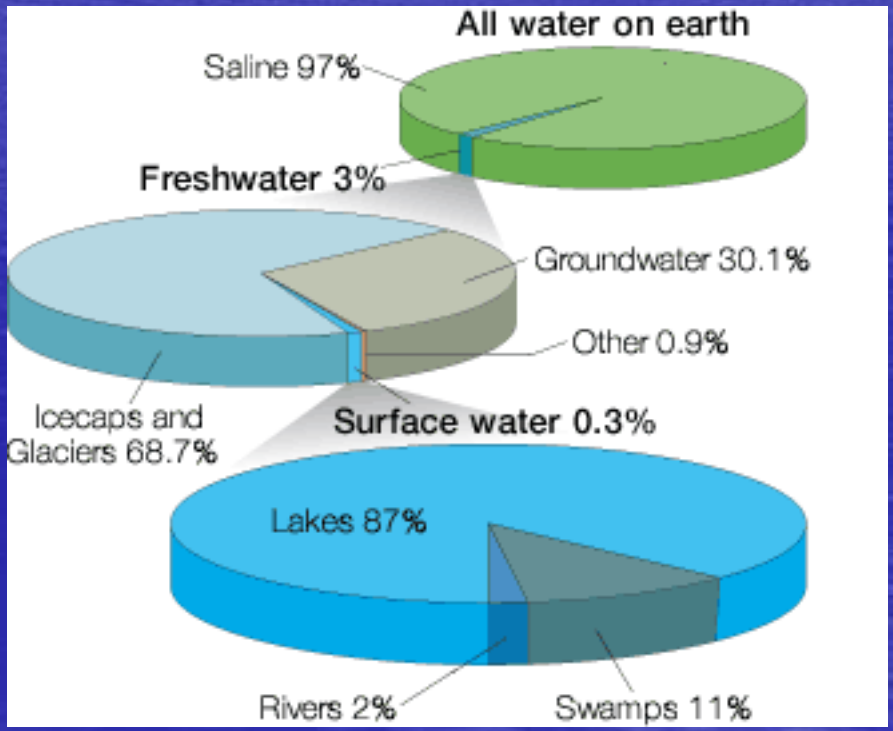




3

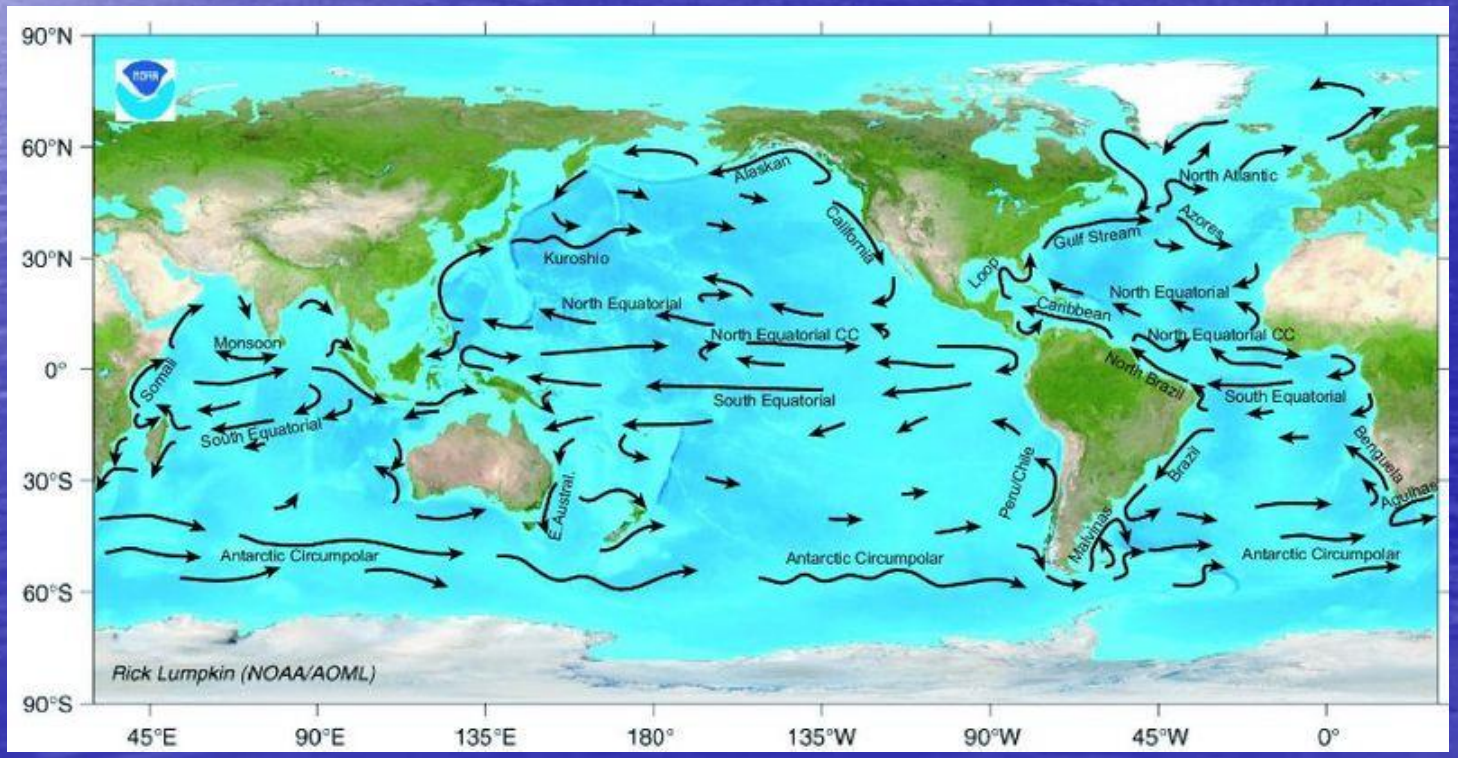
- What percentage of water on Earth does the global ocean contain?
  - 97%





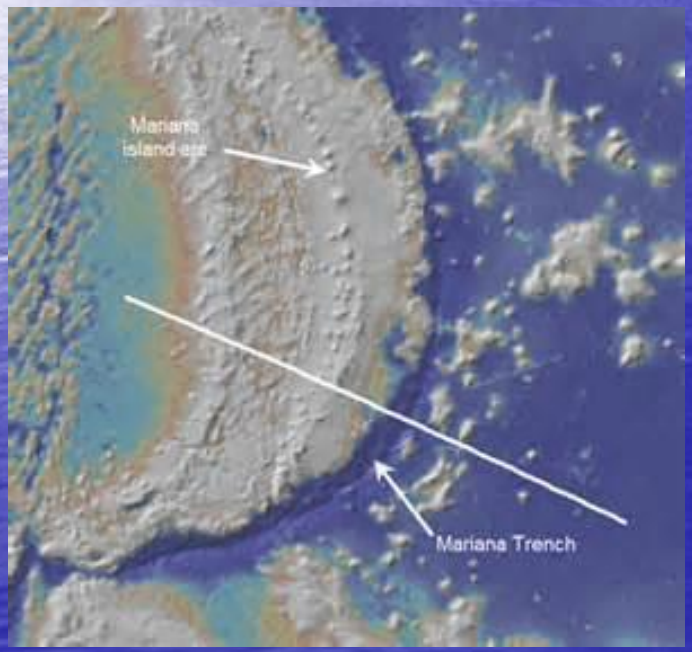
4

- The largest ocean on Earth's surface is the _____.
  - Pacific Ocean



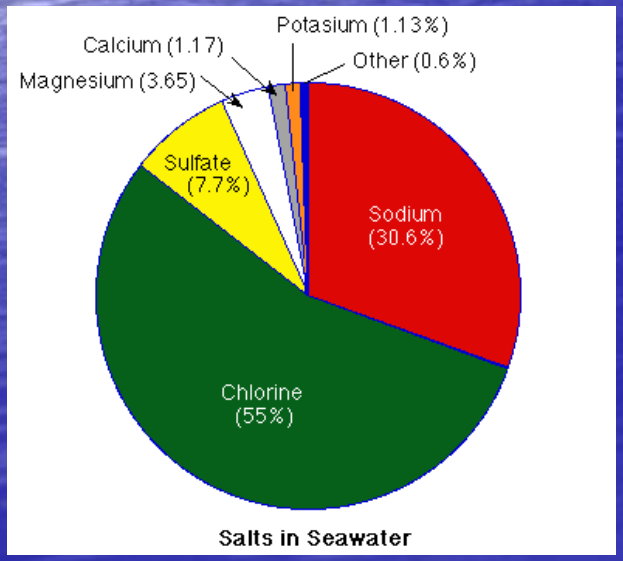
5

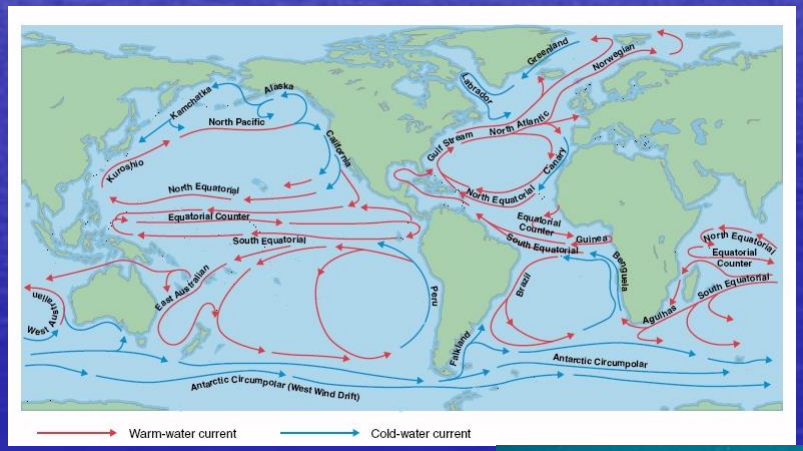
- Earth's deepest ocean is the _____.
  - Pacific Ocean



6

- The study of the physical and chemical make-up of the ocean as well a its life-forms is called
- oceanography



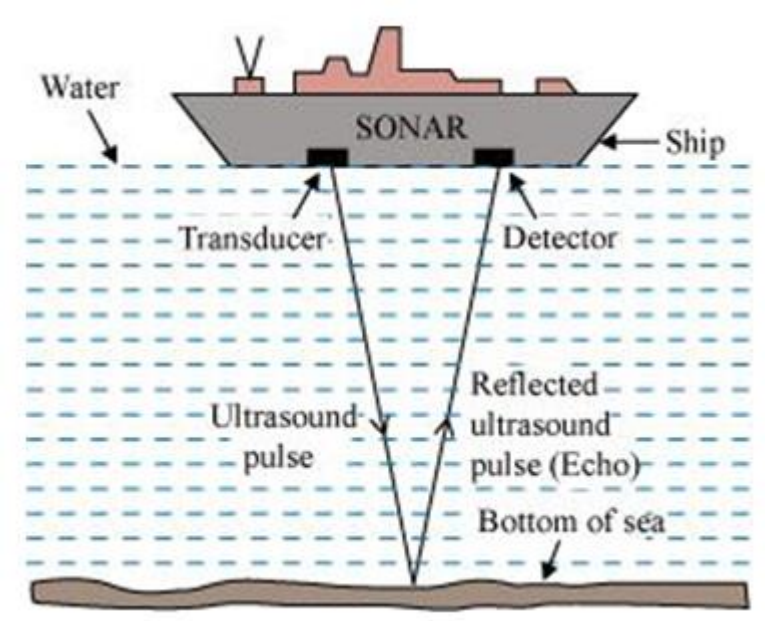


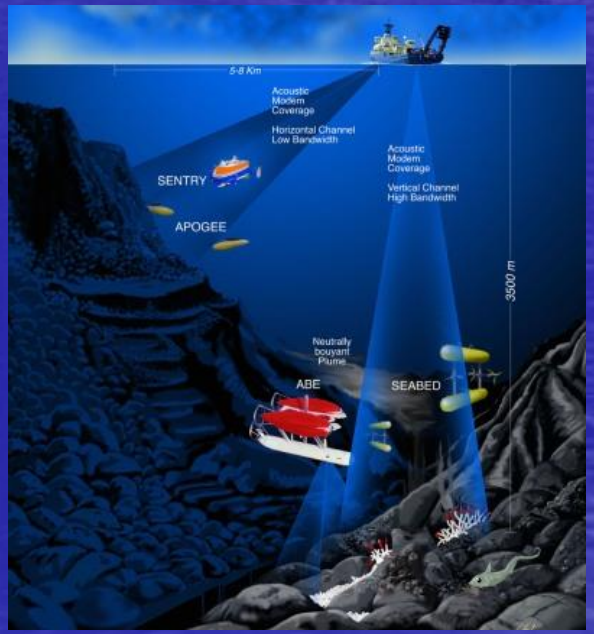
7

- What valuable information do scientists gather from samples drilled by *JOIDES Resolution*?
  - Information about plate tectonics and the ocean floor.

8

- How fast do the sound waves from a sonar travel through sea water?
- About 1,500 m/s





9

- What is the difference between a bathyscaph and a bathysphere?
- A bathyscaph is a self-propelled, free-moving sub. A bathysphere is a spherical diving vessel that remains connected to the ship.

10

- Submersibles have helped scientists make exciting discoveries about the _____.
  - Ocean floor and ocean depths

11

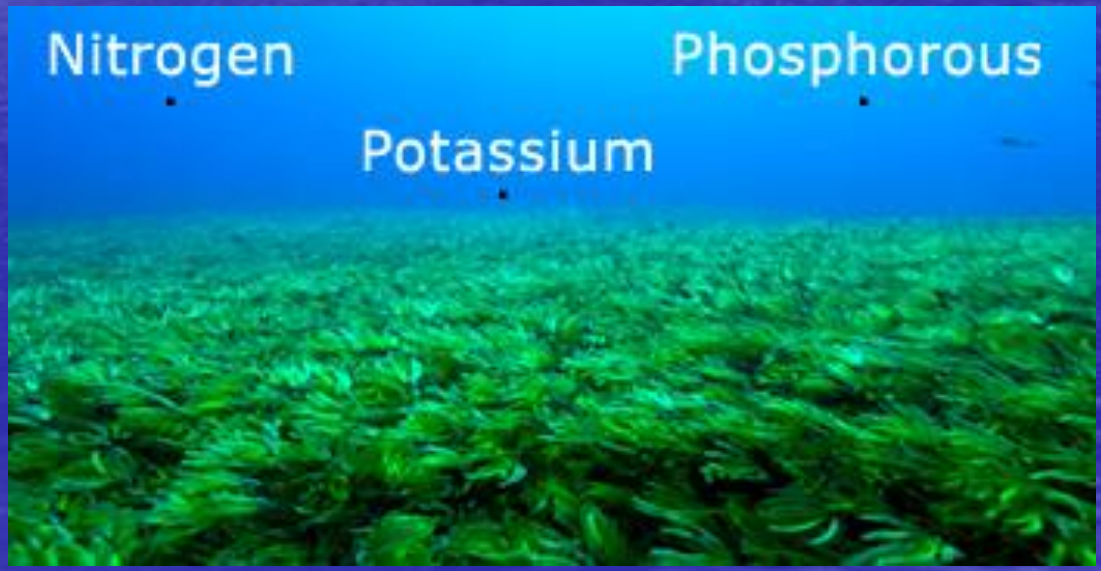
- What characteristics of the deep ocean made it unlikely that oceanographers would discover life forms?
  - Temperature
  - Depth(pressure)
  - No light

Chapter 20 Section 1

Properties of Ocean Water

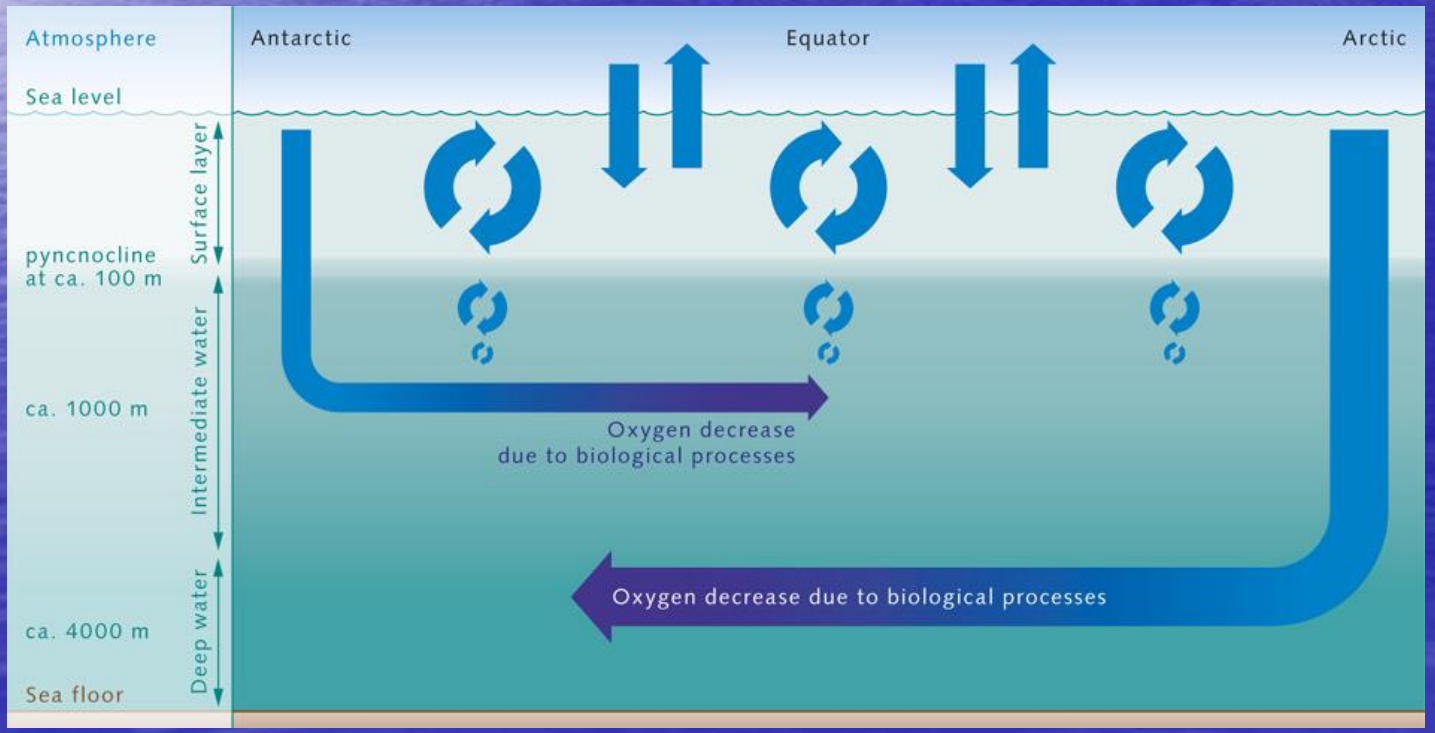
1

- Scientists do NOT describe ocean water by using properties such as
  - c. presence of dissolved vitamins and dissolved minerals.



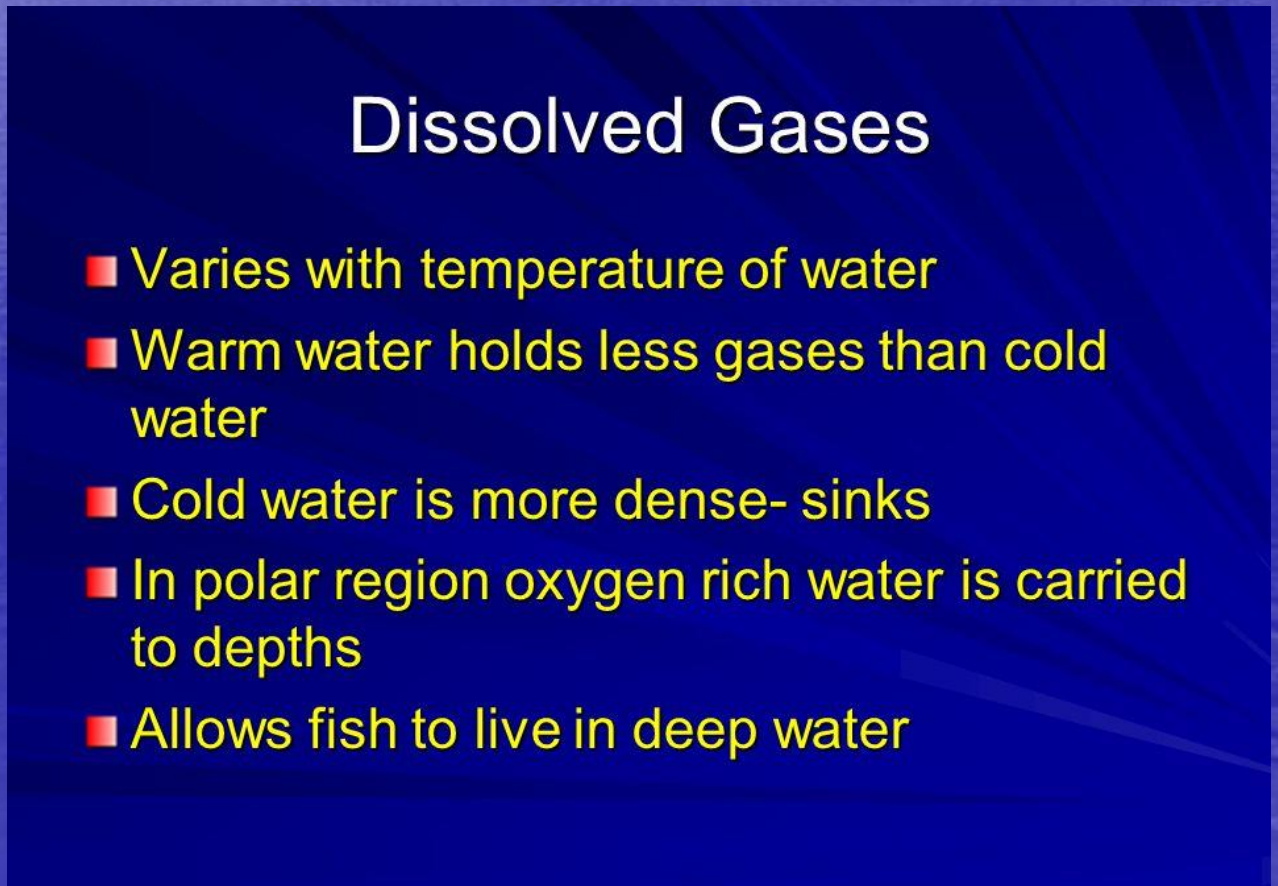
2

- Most oxygen in the ocean
  - A. enters at the surface of the ocean from the atmosphere.



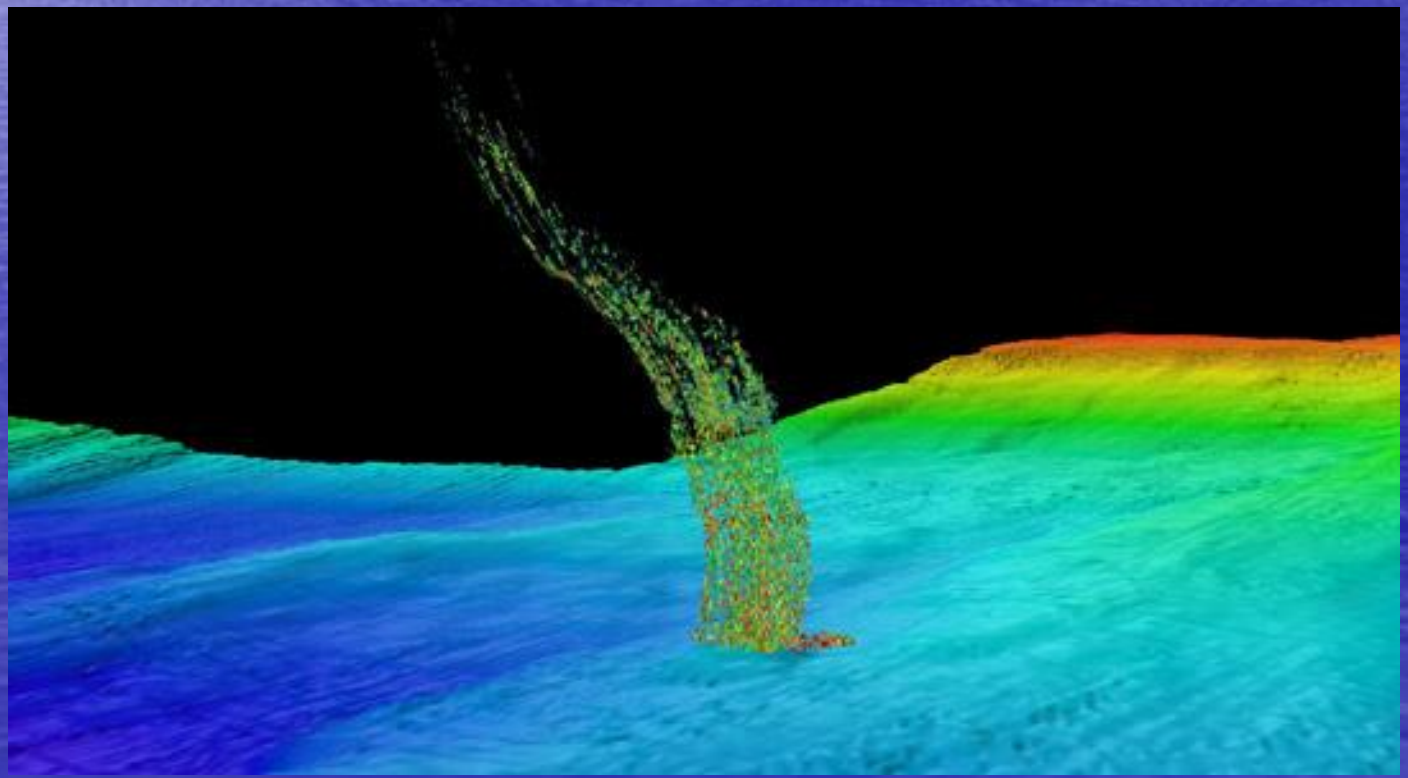
3

- Gases dissolve most readily in what kind of water?
  - D. cold water



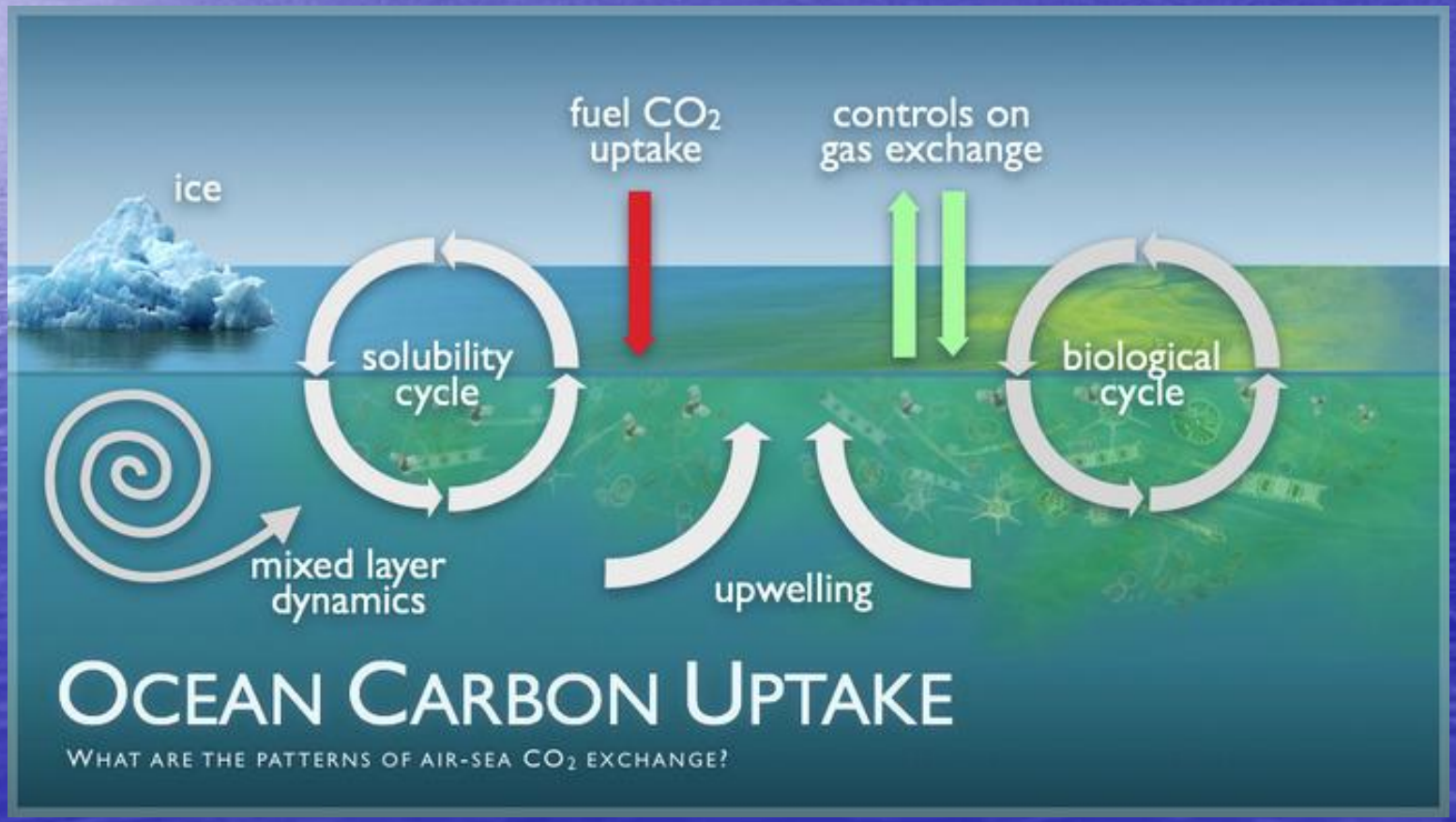
4

- When ocean temperature rises
- A. excess gas is released into the atmosphere.



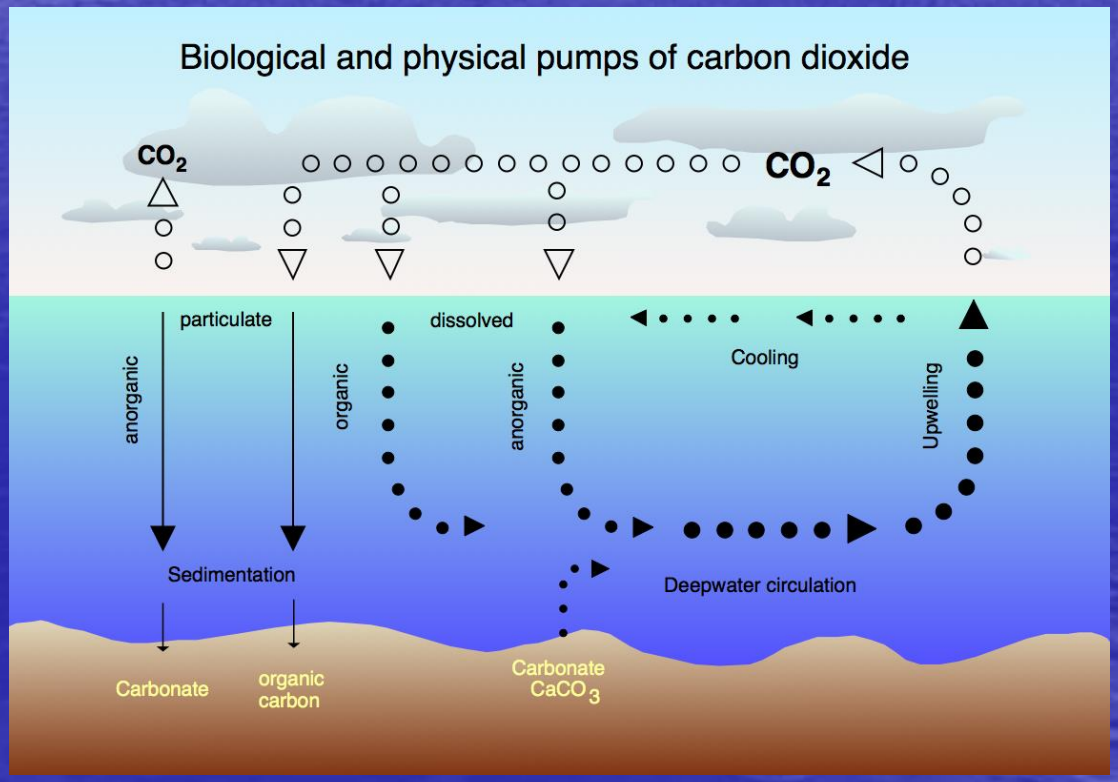
5 How many times more carbon is in the oceans than in the atmosphere?

- C. 60 times



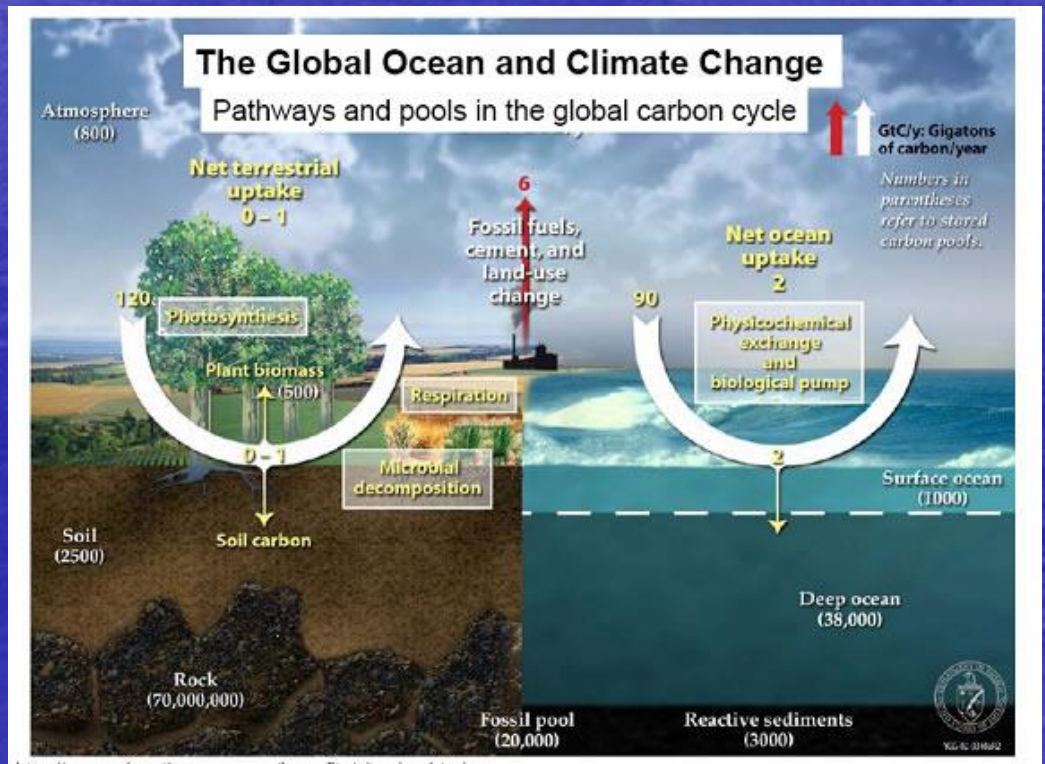
6

- Because of their ability to dissolve and contain a large amount of carbon dioxide, oceans are often referred to as a
  - B. Carbon sink



7

- Because gaseous carbon dioxide affects the atmosphere's ability to trap thermal energy from the sun,
  - B. oceans are important in the regulation of climate.



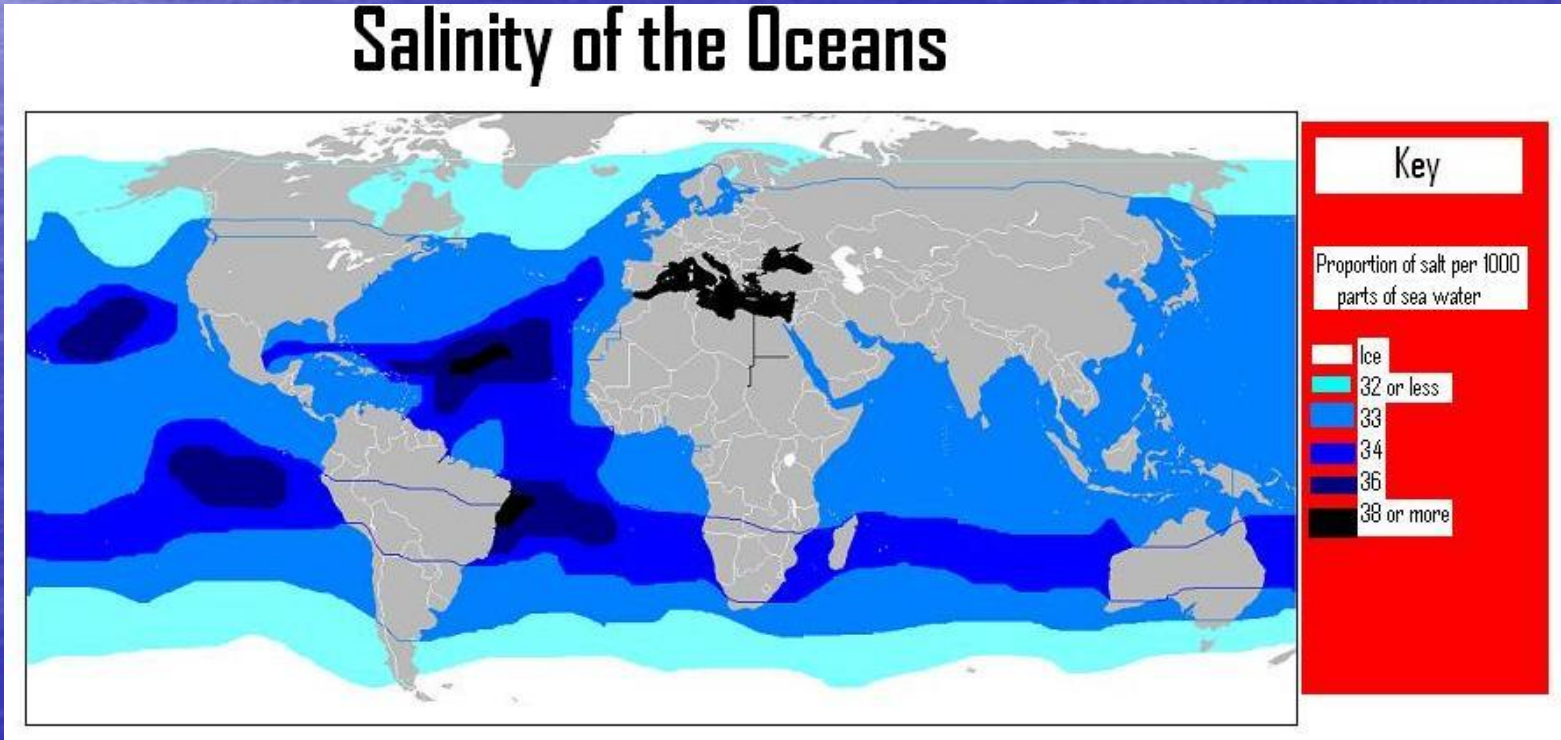
http://genomicsgtl.energy.gov/benefits/simple.shtml

8

- Elements that exist in very small amounts are called _____.
- trace elements

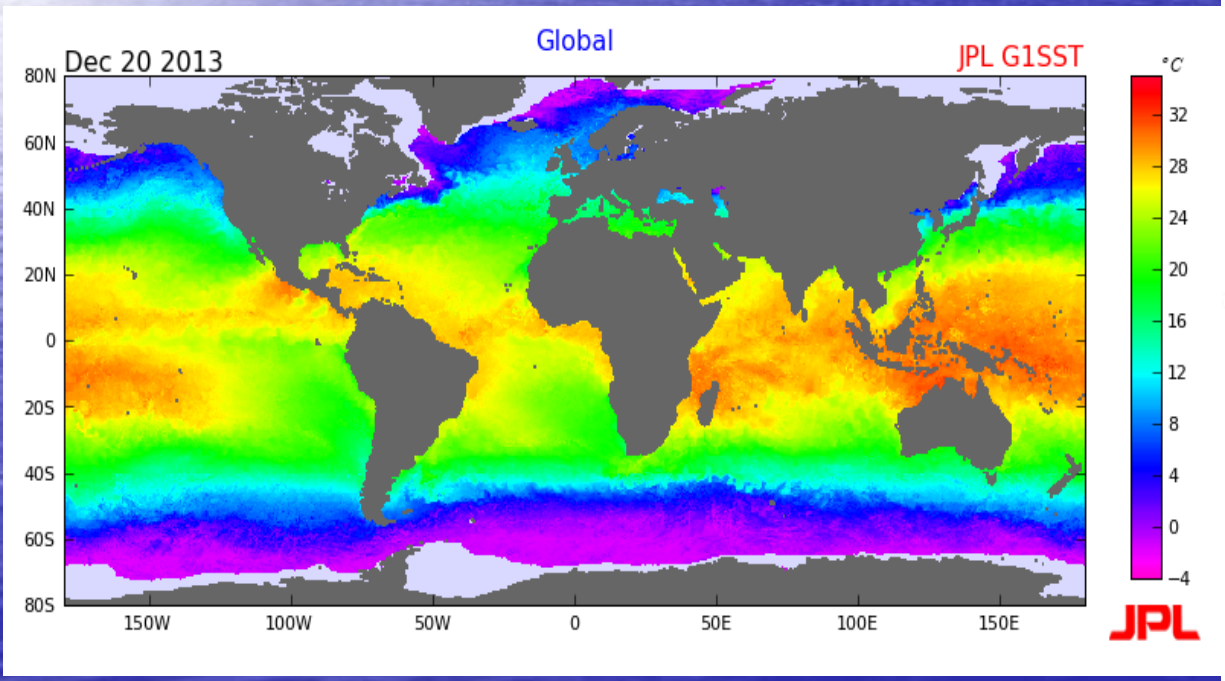
9

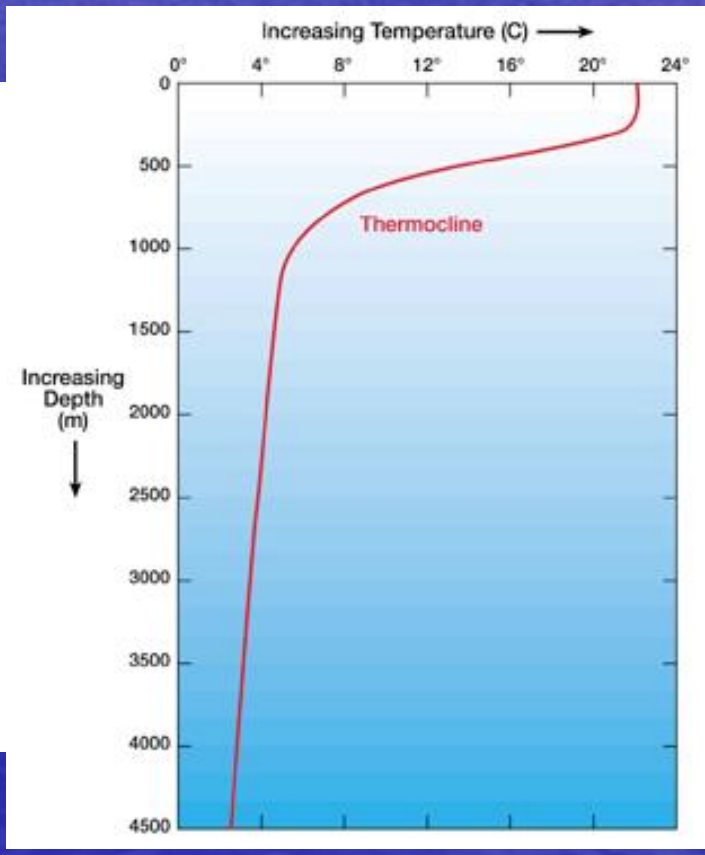
- A measure of the amount of dissolved salts and other solids in a given amount of liquid is _____.
- salinity



10

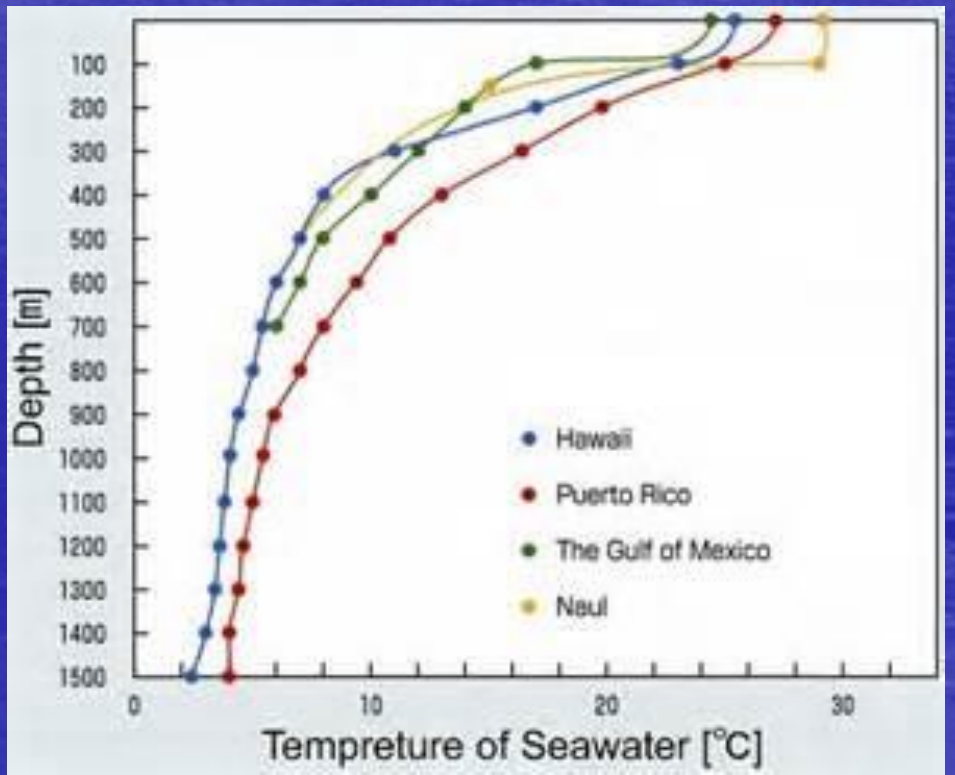
- Ocean temperature varies depending on
- B. depth of water and location on the surface of the oceans.





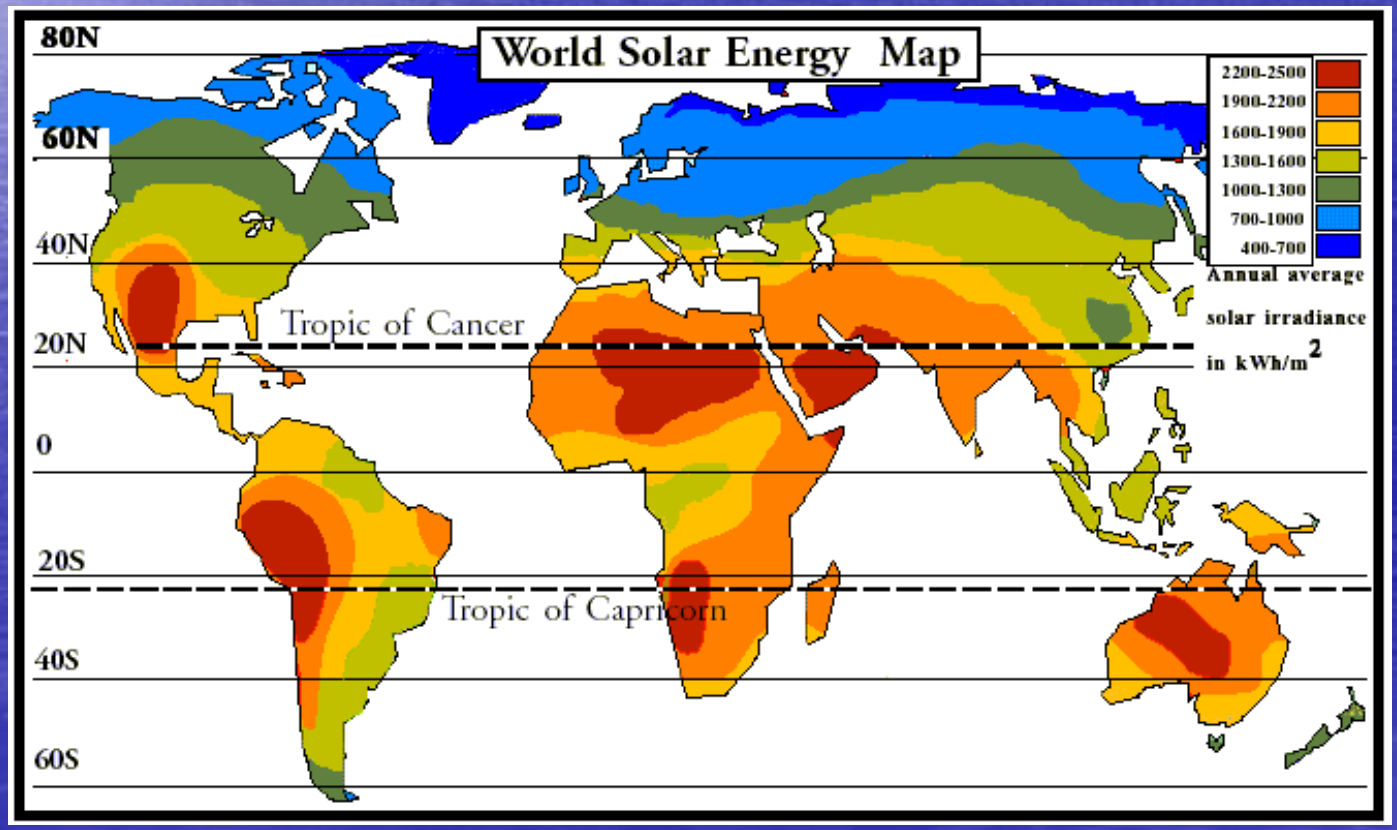
11

- Why does the temperature of the zone of surface water decrease only slightly as the depth increases?
- The surface water is mixed with the deeper water.



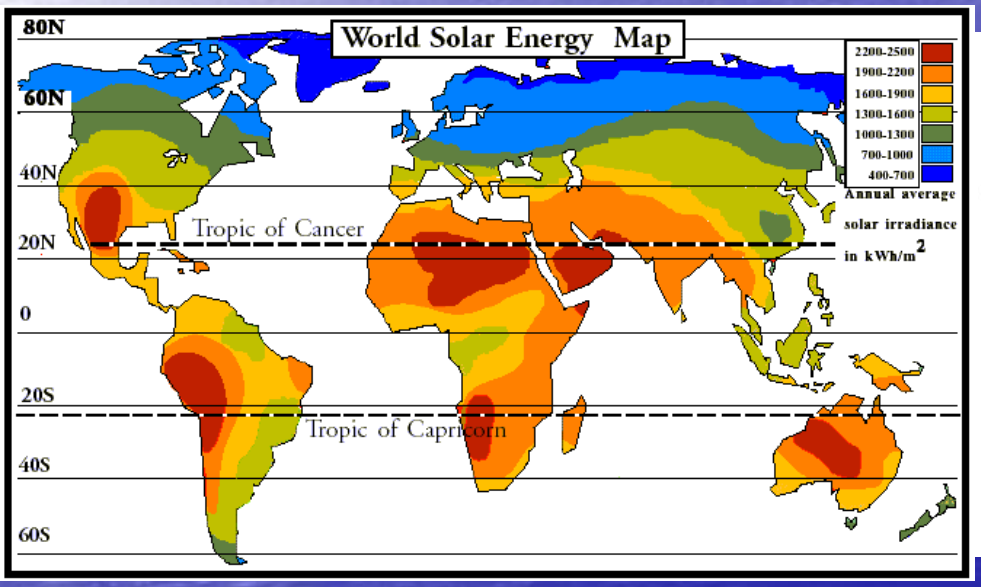
12

- Where does the greatest amount of solar energy reach the surface of the ocean?
- At the equator

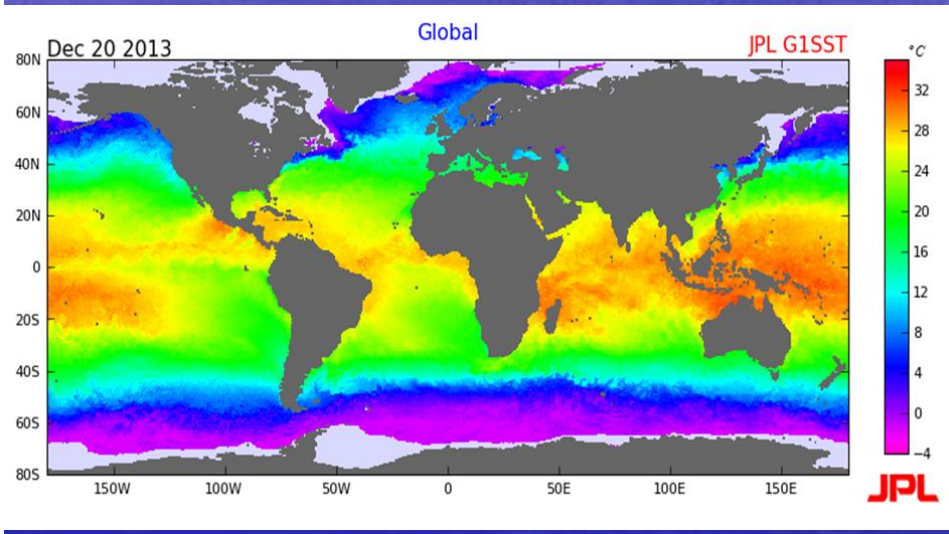


Do you see the connection between ocean temperature and where the solar energy reaches Earth?

Solar Energy



Ocean Temperatures

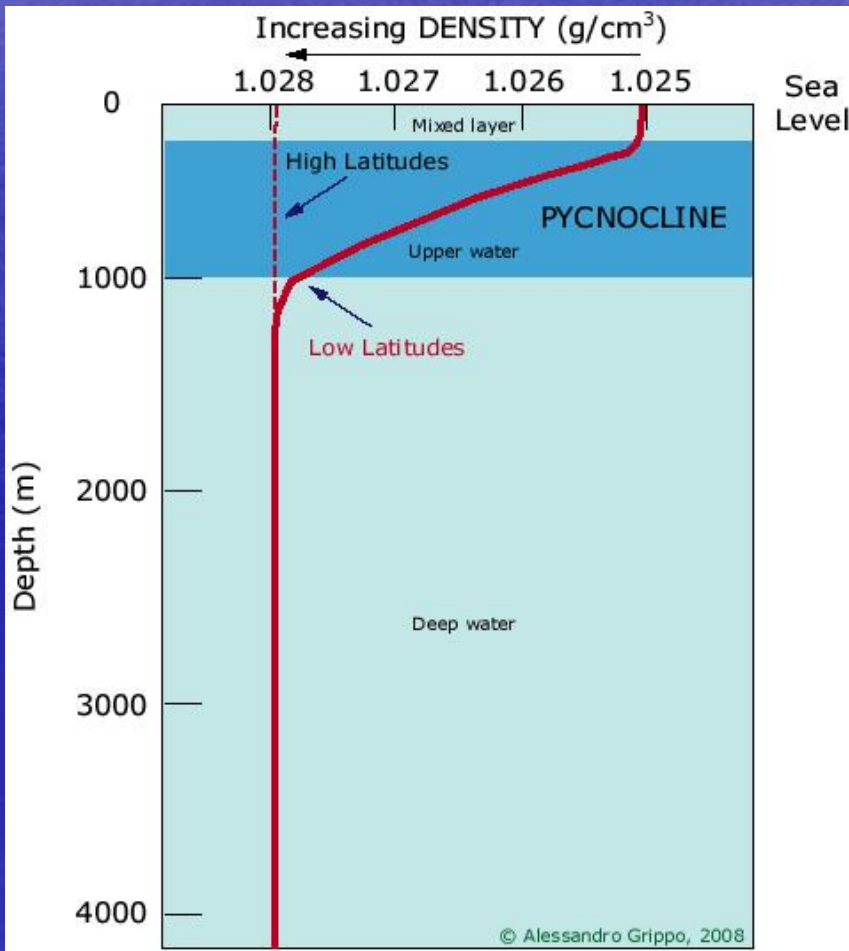


13

- A floating layer of sea ice that completely covers an area of the ocean surface is called _____.
- Pack ice

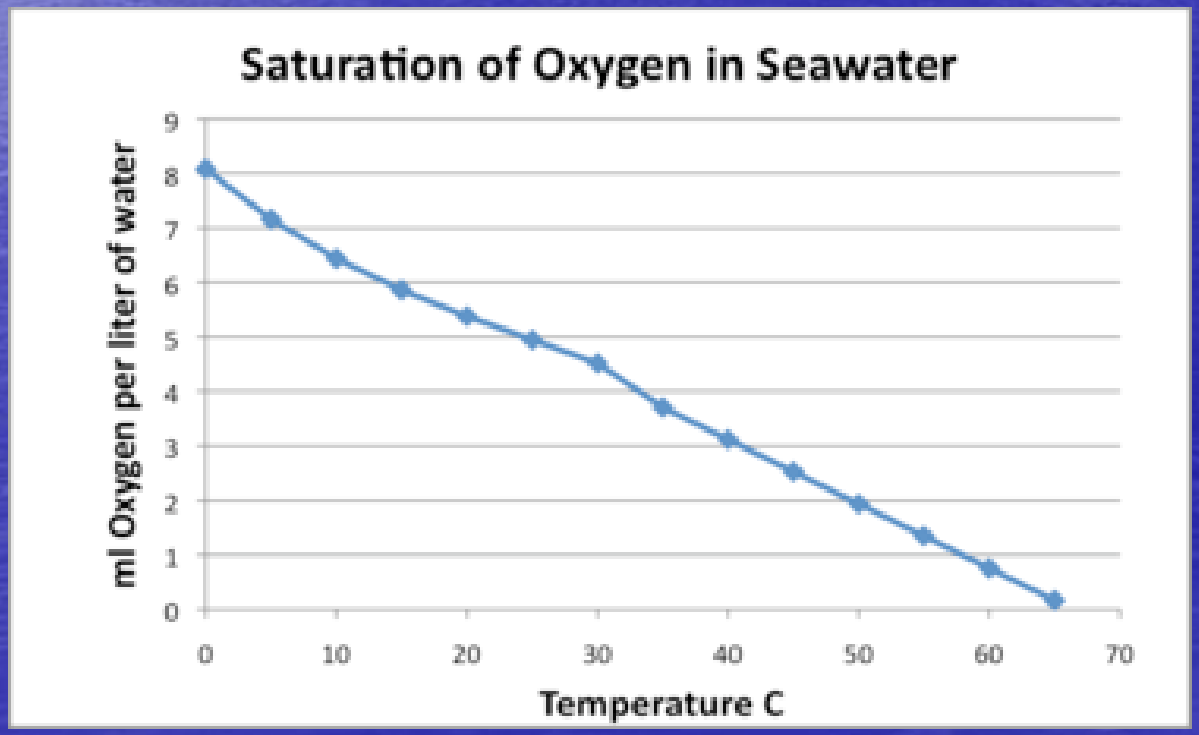
14

- How does the 2ºC temperature of the deep zone affect the density of the ocean water?
- It makes it very dense



15

- How does the amount of dissolved gases in cold, deep ocean water compare to the amount of dissolved gases in warm shallow, ocean water?
- There are more dissolved gases in the cold, deep water.



16

- Why does ocean water appear blue?
- The other colors of white light (ROY G BIV) are absorbed and blue is reflected.

WHY AND HOW

Why is the ocean blue?

The ocean appears blue to us because of the light from the sun.

We often think that the sun's light just allows us to see, but without light, colors wouldn't even exist!

What we see as white light from the sun is actually a combination of all the colors of the rainbow. Try and imagine red, orange, yellow, green, blue, indigo and violet rays of light streaming from the sun. Objects either absorb or reflect these rays.

QUESTION & ANSWER:

What colors make up the light from the sun?

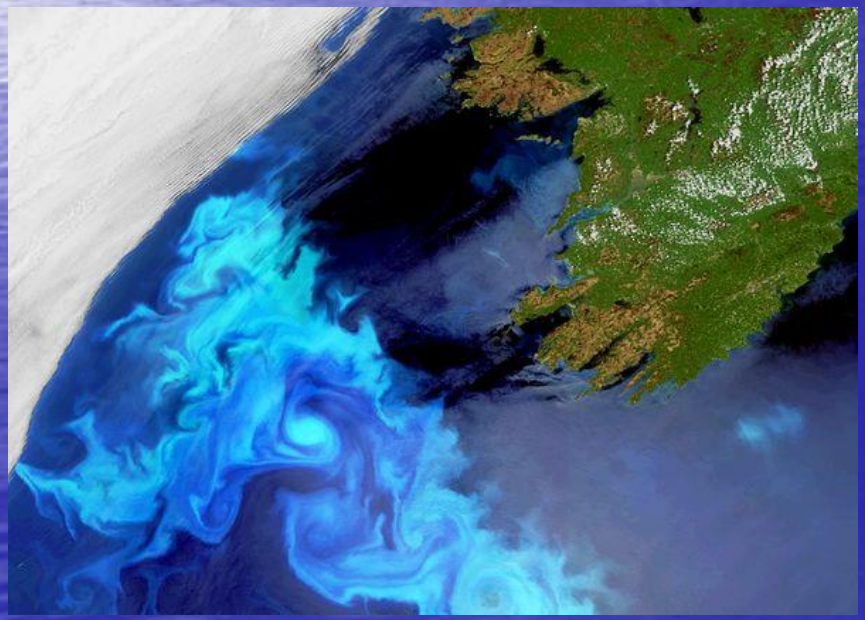
What color/s does the ocean reflect?

What color/s does the ocean absorb?

When the sun's light hits the ocean, the red, orange, yellow, green, indigo and violet rays are absorbed so that we can't see them! Only the blue light is reflected. The ocean itself isn't really blue; we're just seeing the reflected blue light.

17

- How do scientists determine the presence of phytoplankton in the ocean?
- By looking at the color of the water. Phytoplankton absorb red/blue light and reflect green. Color change tells us about the health of the water.



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