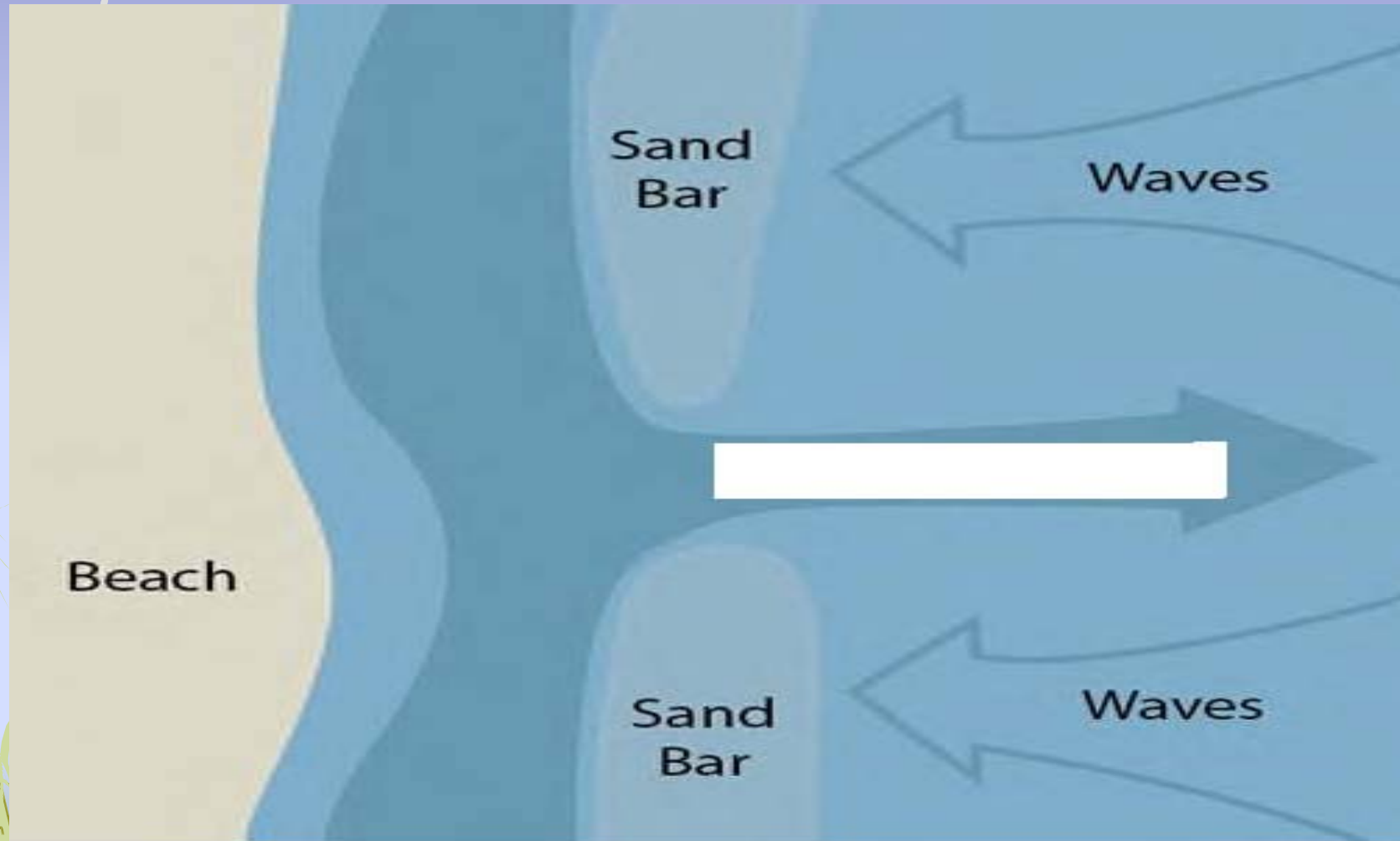


Oceanography

NC Science Olympiad
Coaches Institute 2007

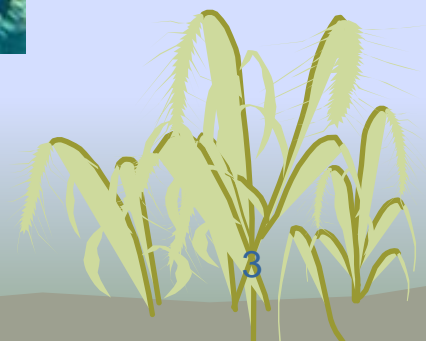
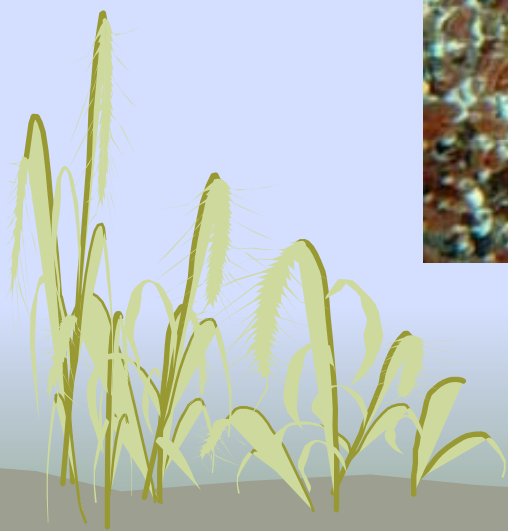
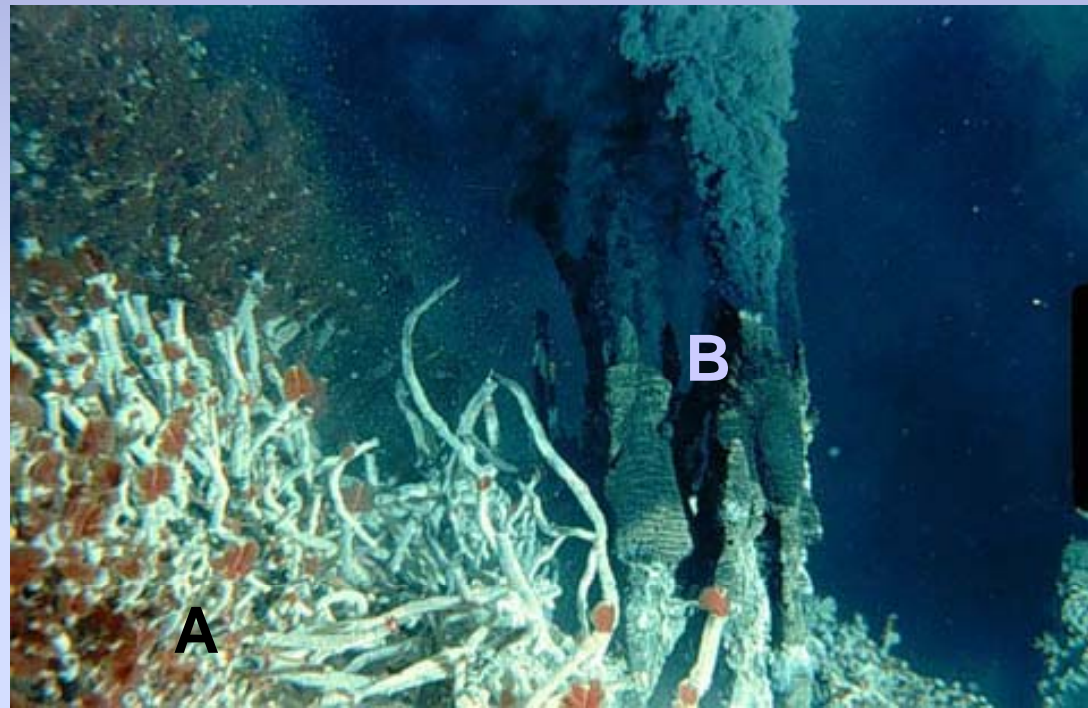


What does the blank space represent?

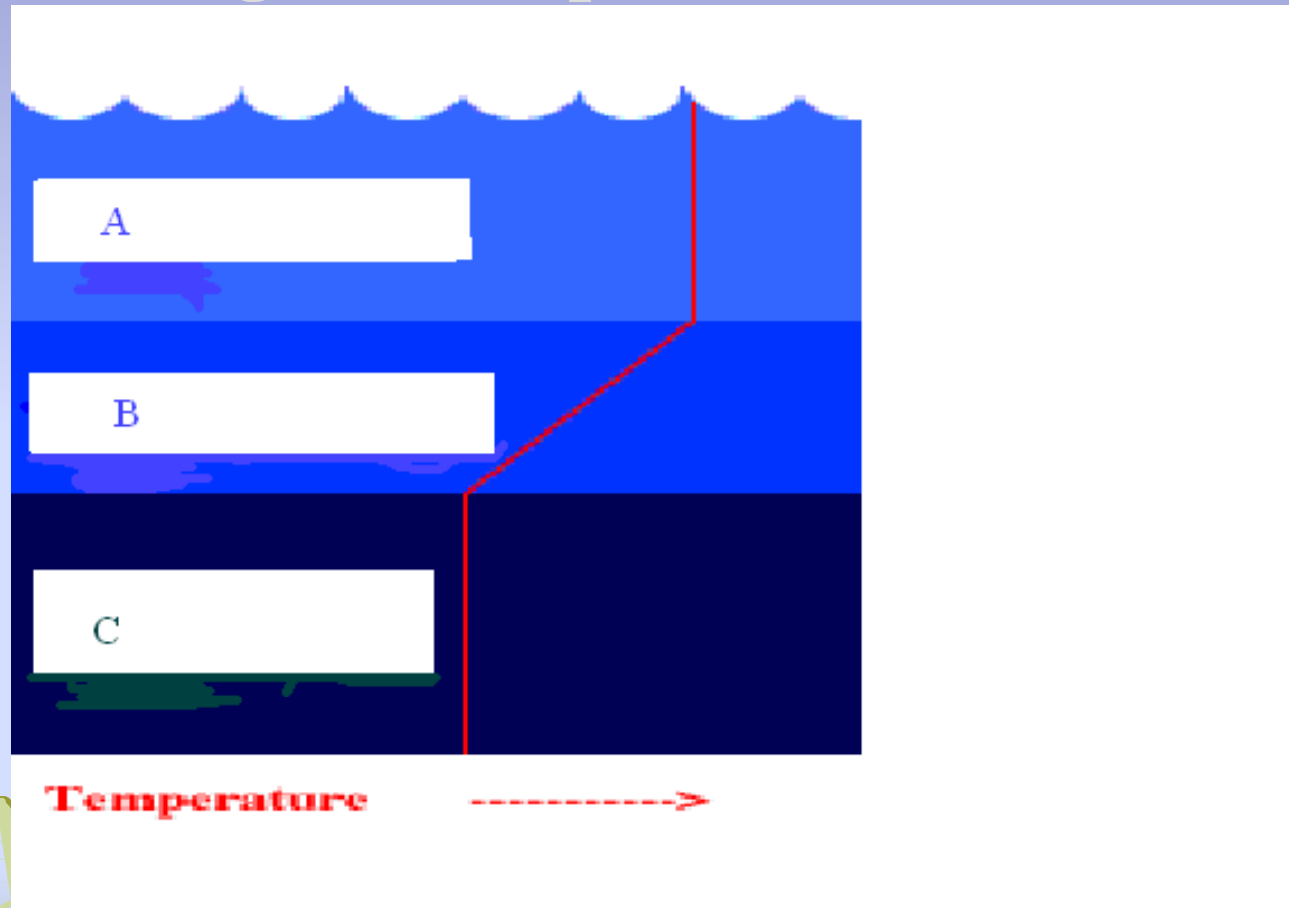


Picture from <http://www.seagrant.umn.edu/rip/>

Identify A & B

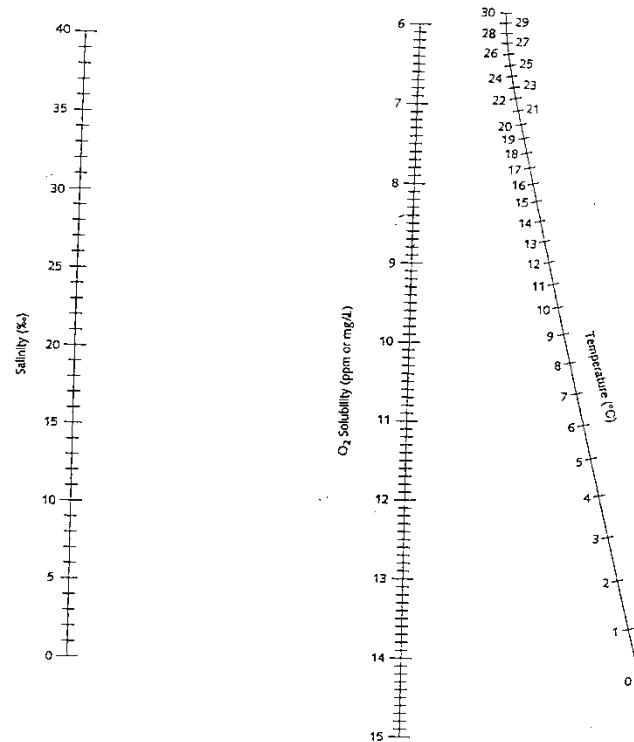


Identify these layers of the ocean according to temperature.



Calculate the Dissolved Oxygen content of the water if Salinity is 35 ‰ and Temp. is 23°C.

Figure 1.6 Nomograph of oxygen solubility in seawater. A straight line constructed between any two variables will intersect the third scale at the appropriate value of the third variable. Oxygen solubility in ppt (mL/L) can be obtained by multiplying mg/L by 0.7.



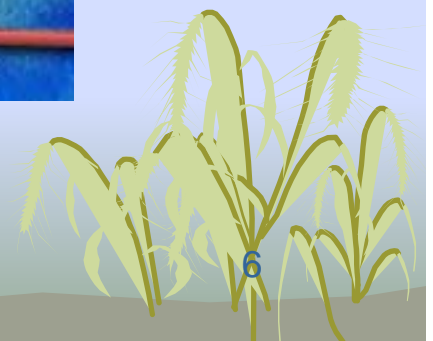
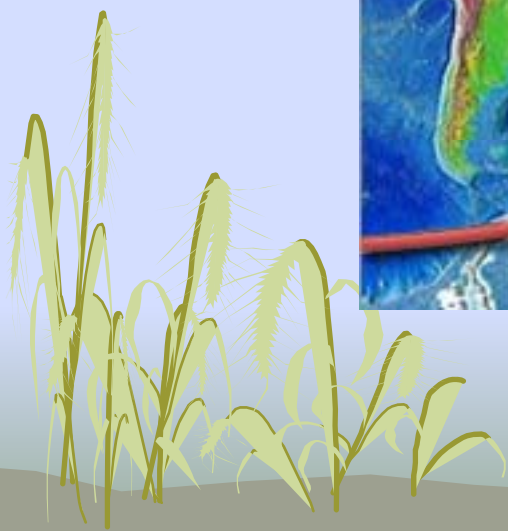
from Haefner, Estuary Marine Biology
1996 Heath and Company

Temperature, Salinity, Density, and Dissolved Oxygen

13

5

What term is given to this picture?

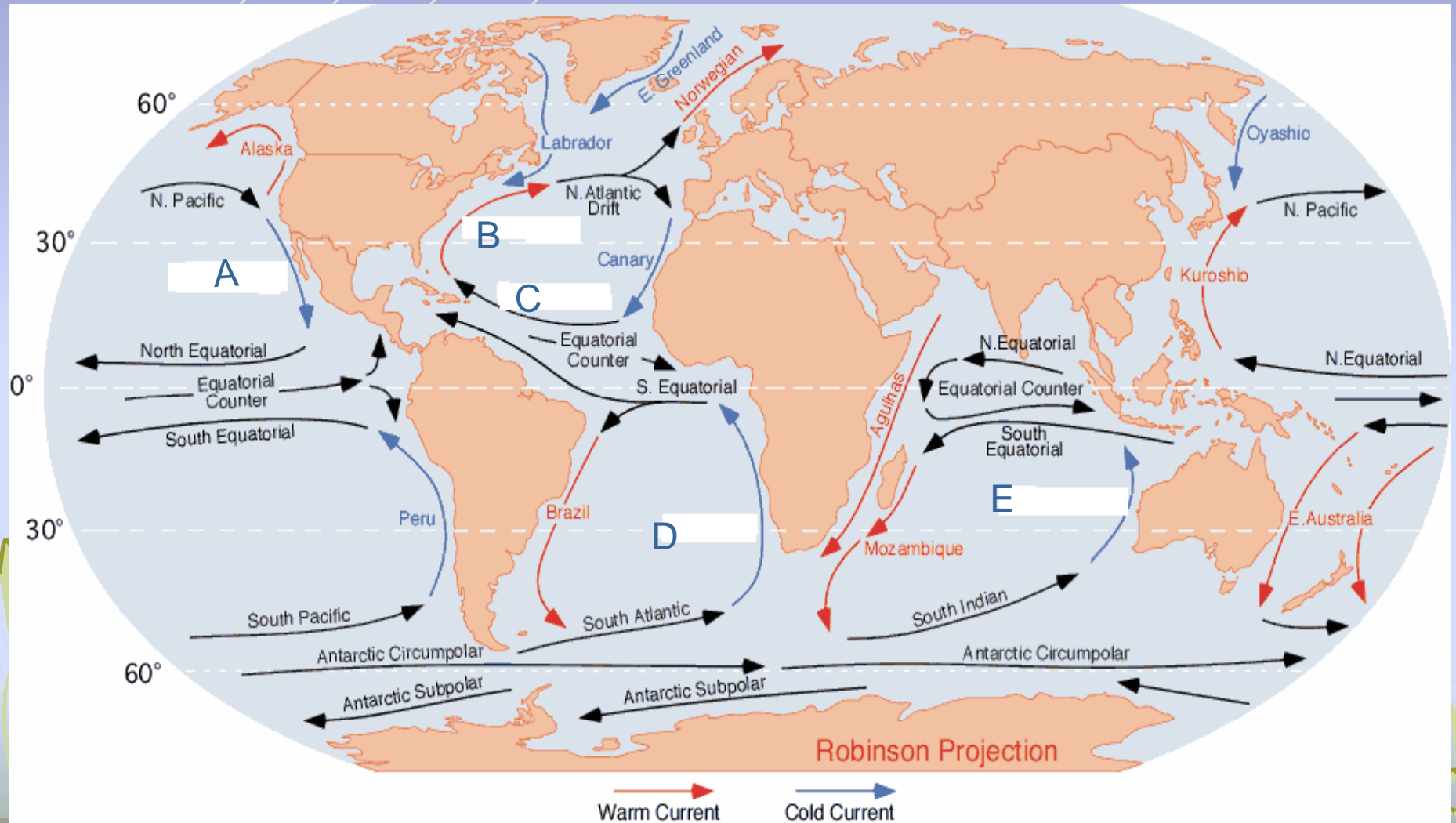


How do particles in a wave move?

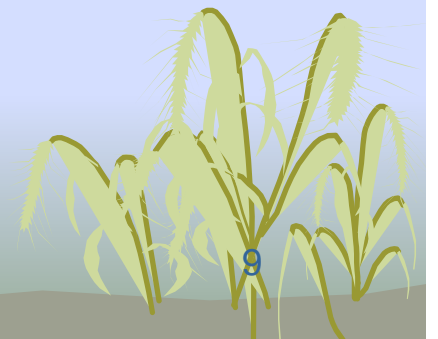
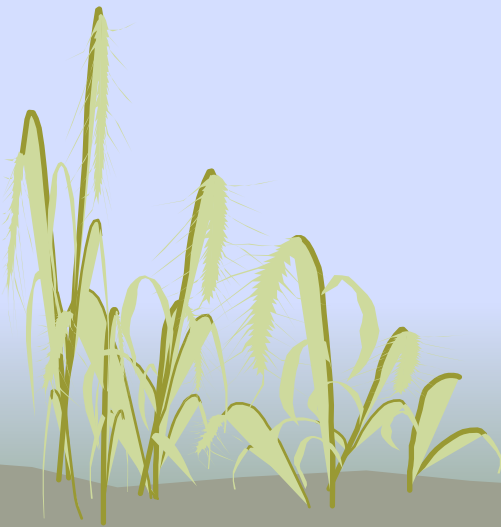
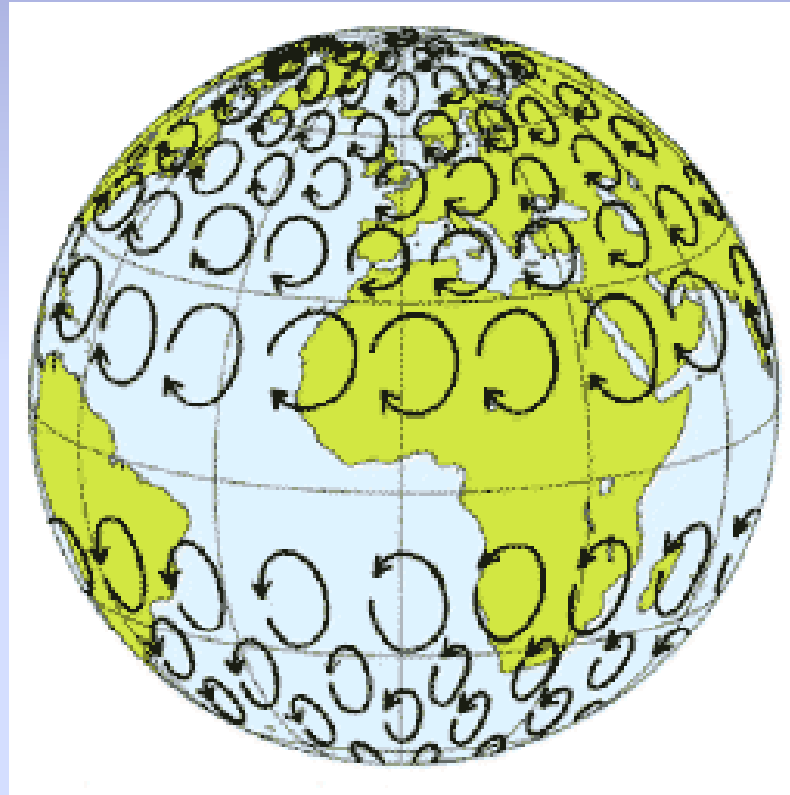


<http://sprott.physics.wisc.edu/fractals/natural/waves.jpg> by J. C. Sprott

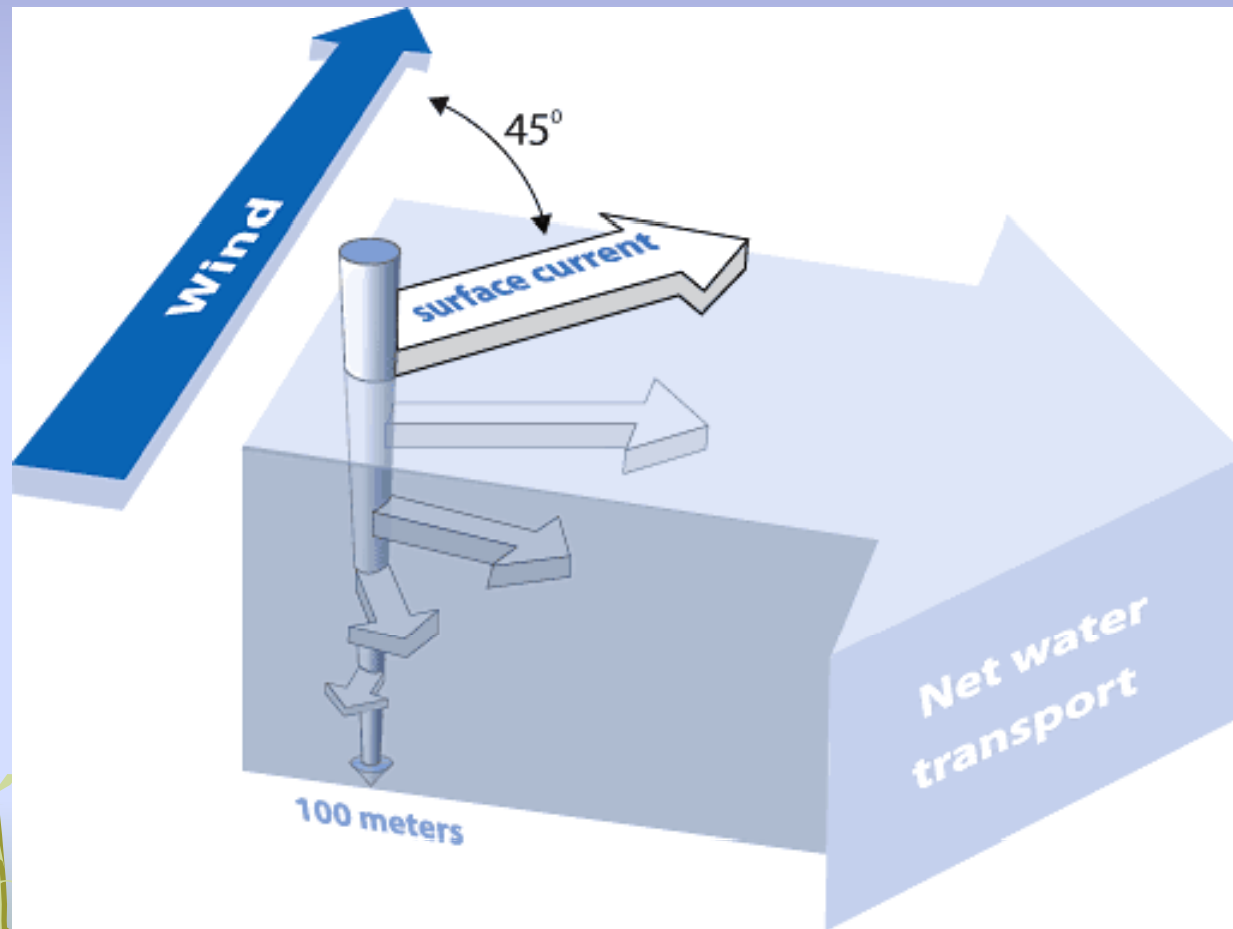
Identify the warm and cold currents at A, B, C, D, & E.



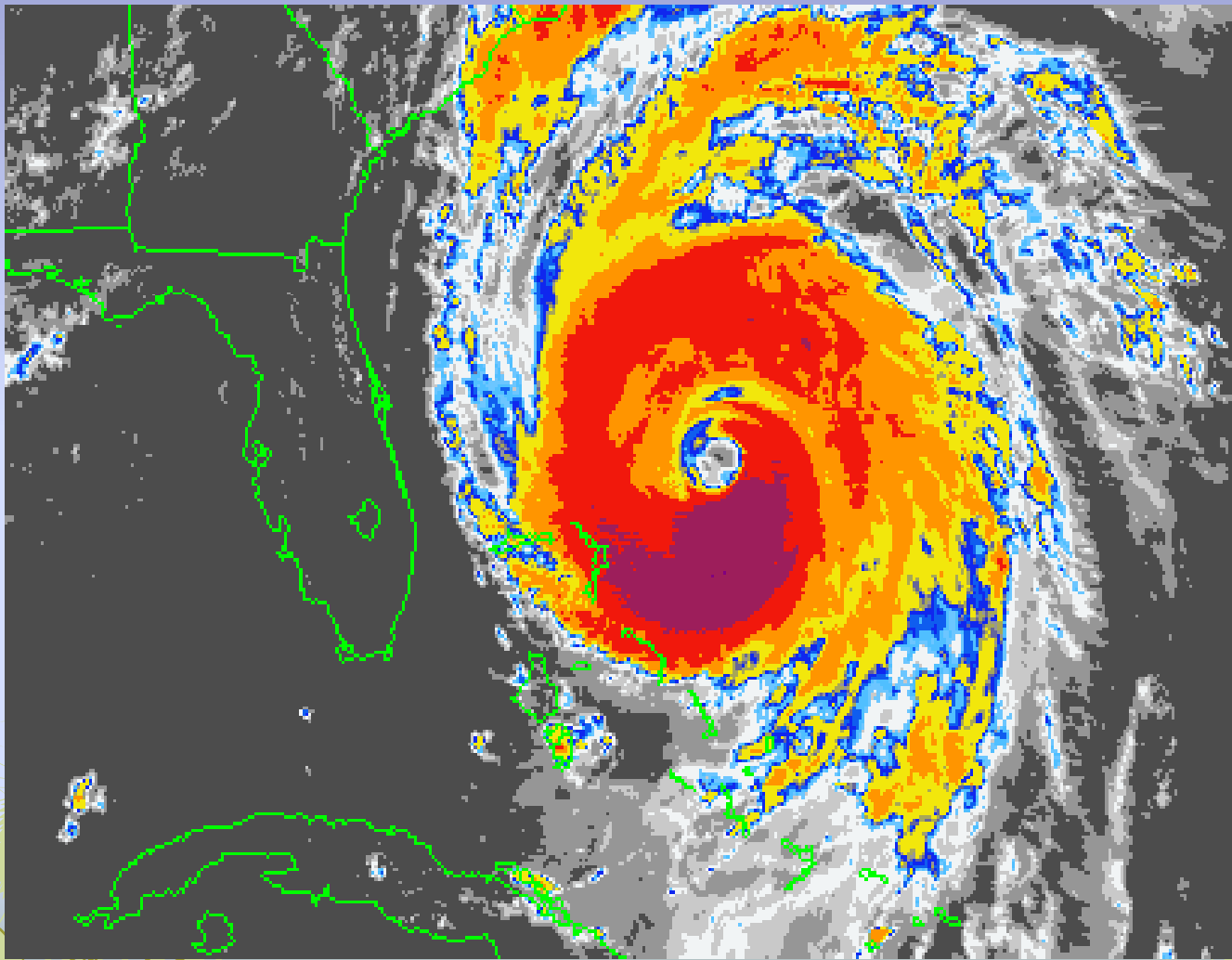
What causes this pattern of currents?



What term is given to this diagram?

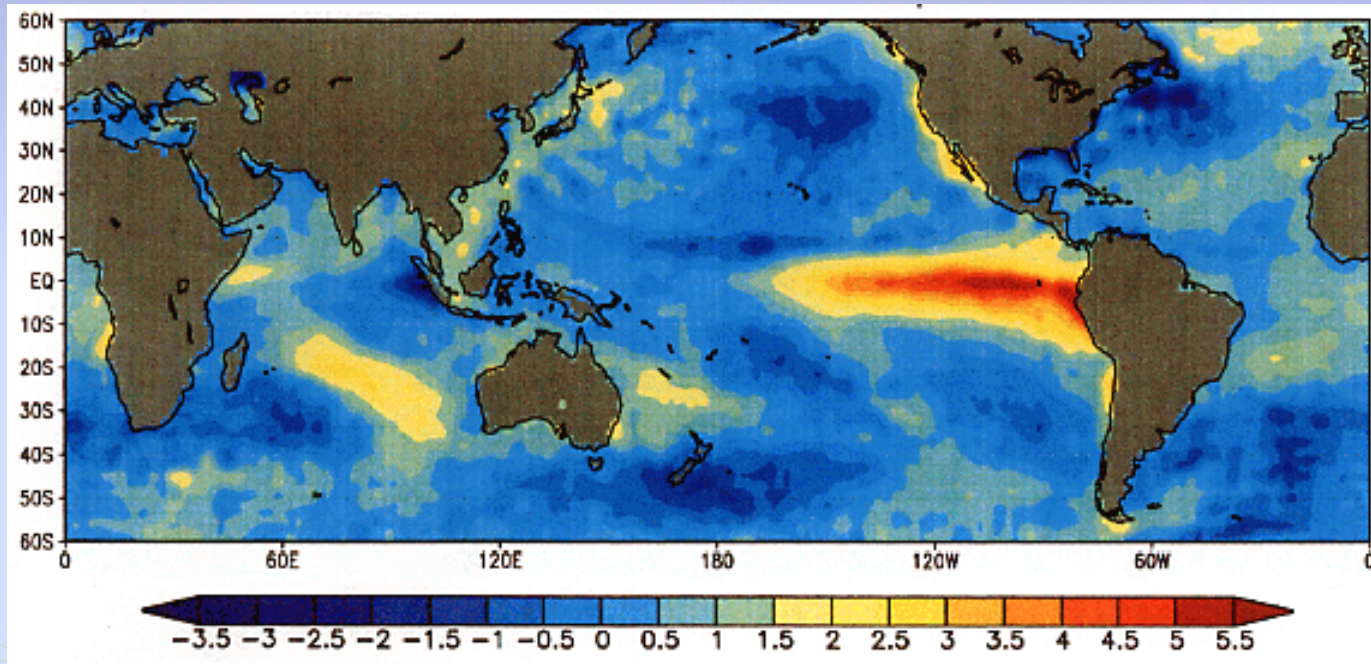


Where do Hurricanes form?

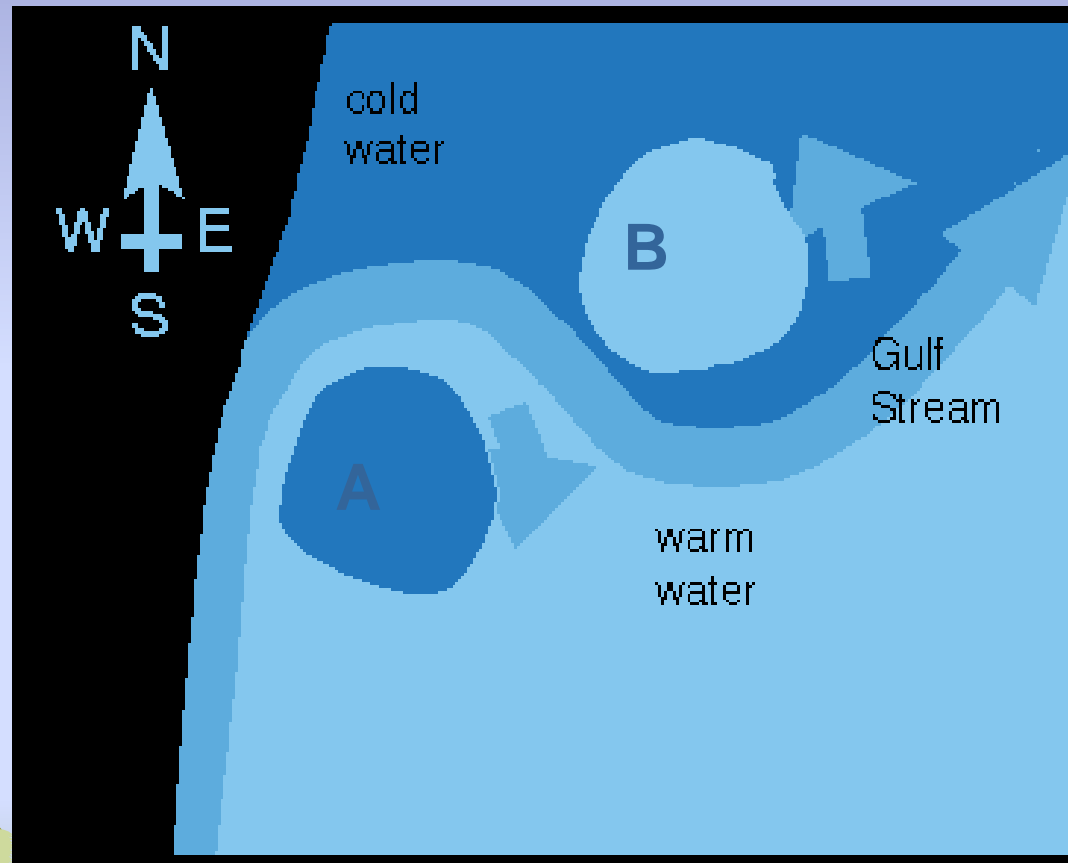


<http://www.stormsurf.com/page2/tutorials/hurricane.shtml>

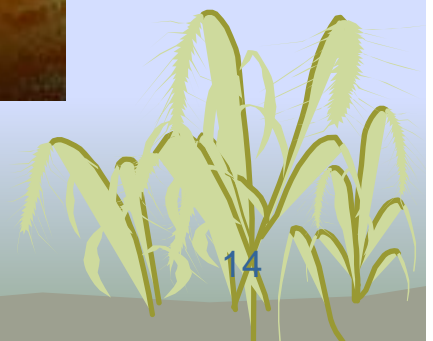
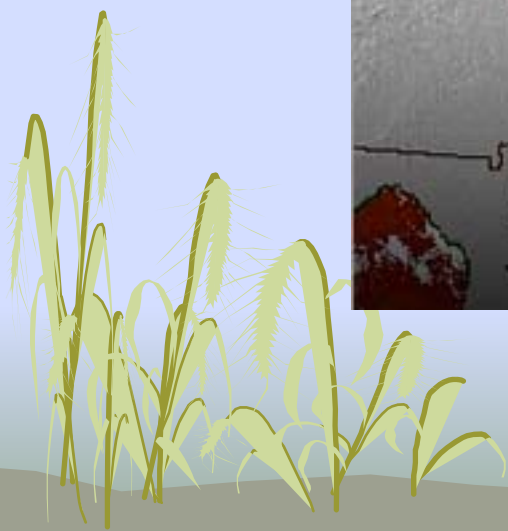
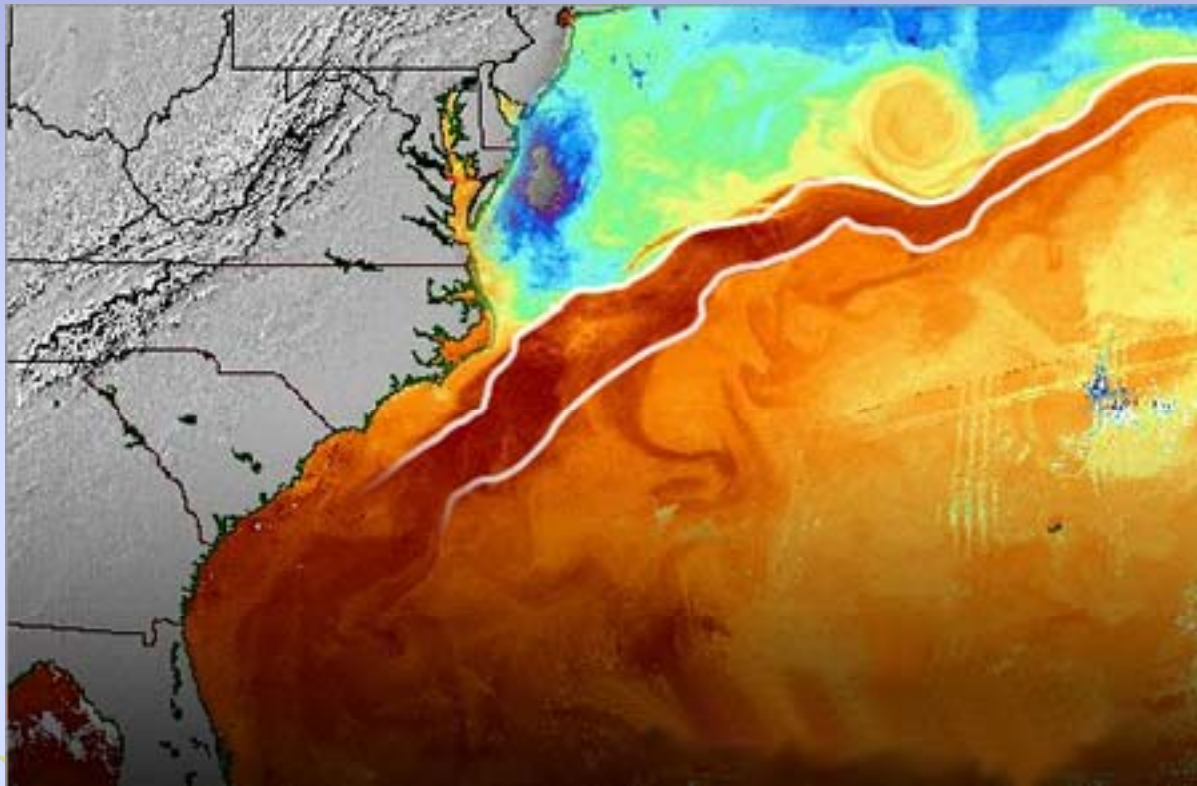
What climate event does this picture reference?



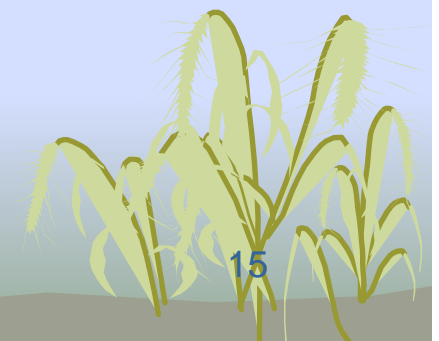
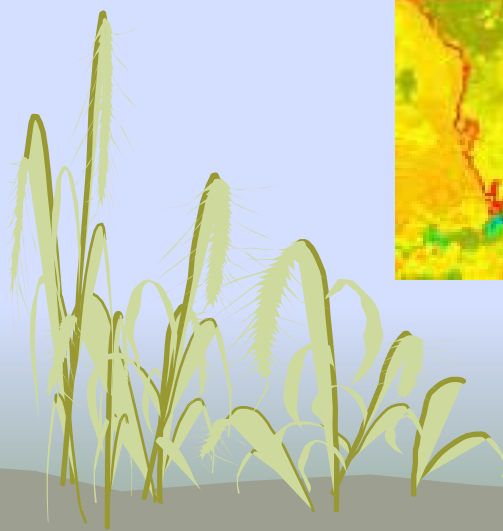
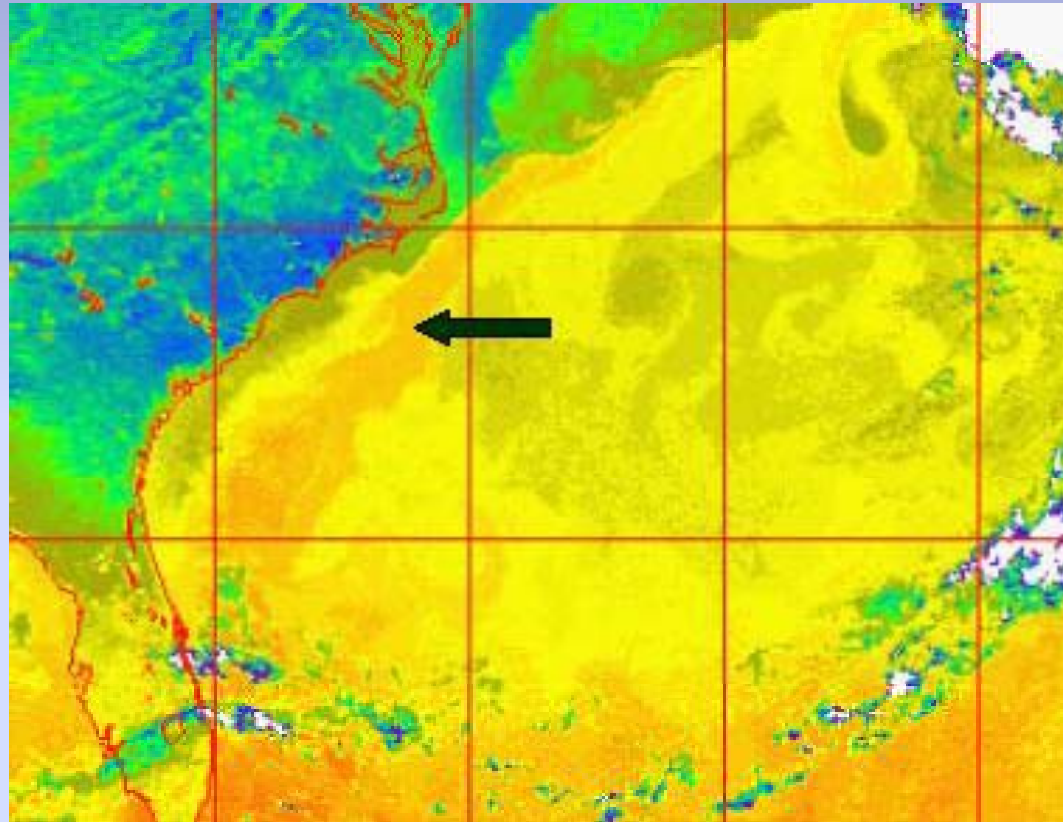
What does A and B represent?



What current does this picture represent?

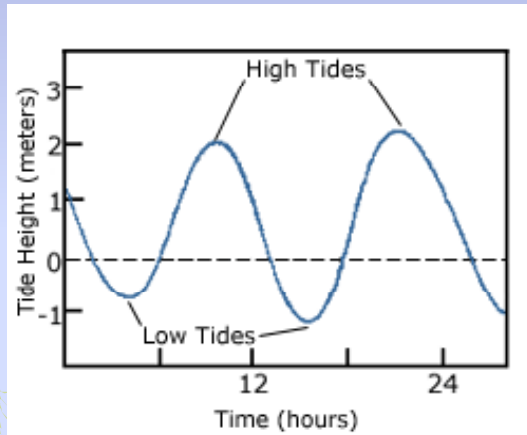


What is the arrow referencing?

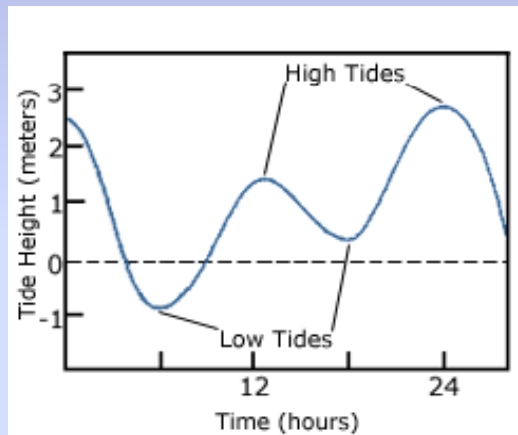


What types of tides do these three graphs represent?

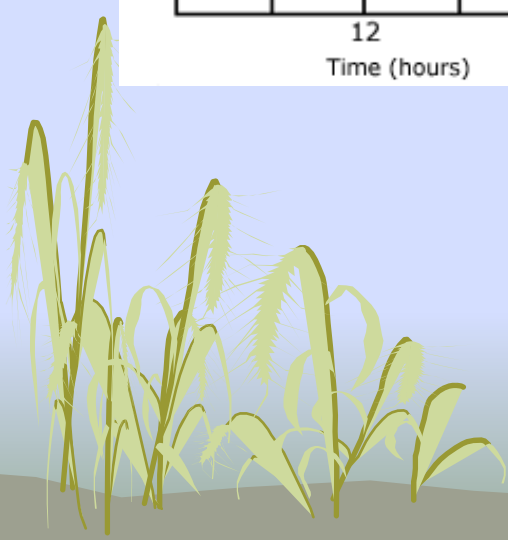
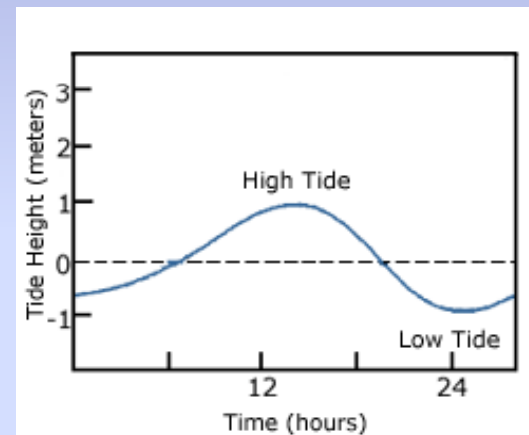
A



B



C



Salinity

- What is the average salinity of ocean water?
- What is average estuarine salinity?



Name at least 5 processes that change the salinity of water.

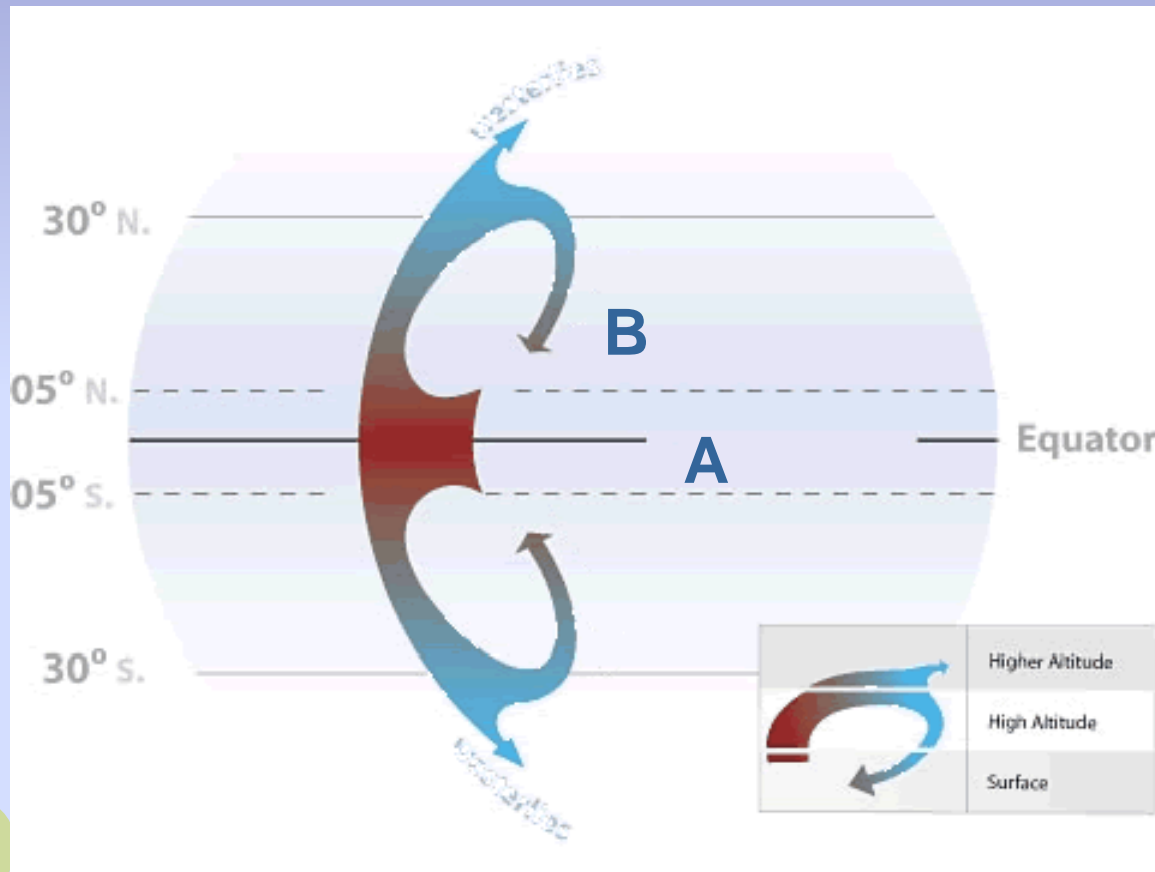


Where do ocean salts come from?



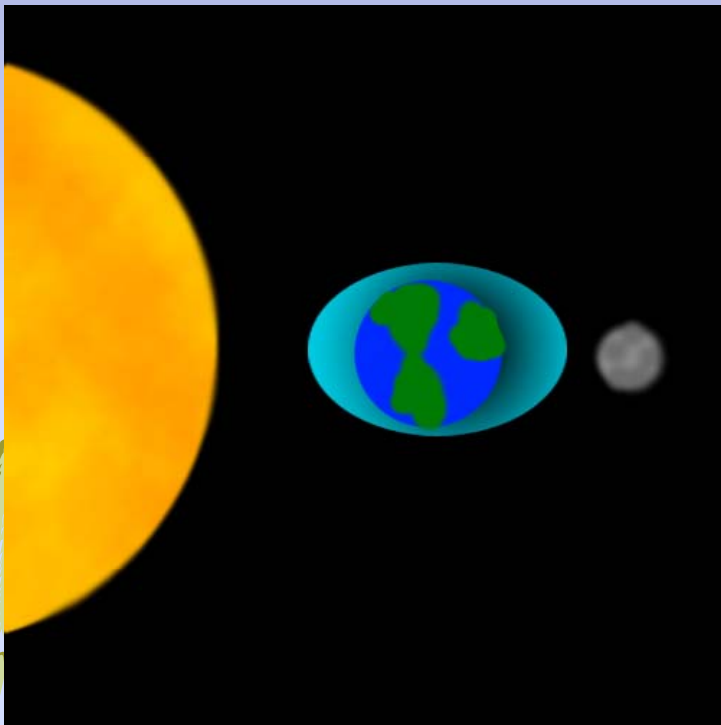
http://www.klbschool.org.uk/exchanges/expeditions/argentina_05/rock%20salt.JPG

What wind conditions does A and B represent?

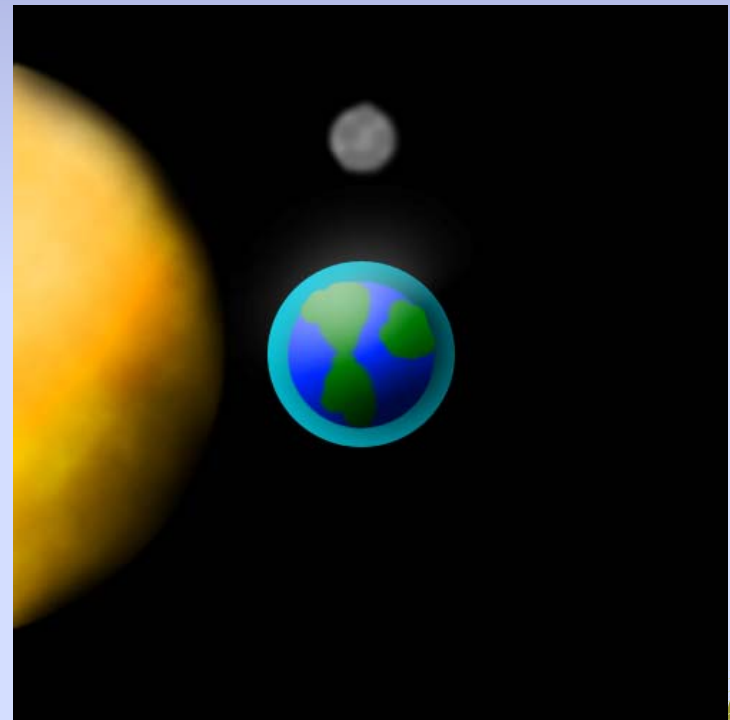


What type of tides does A and B represent?

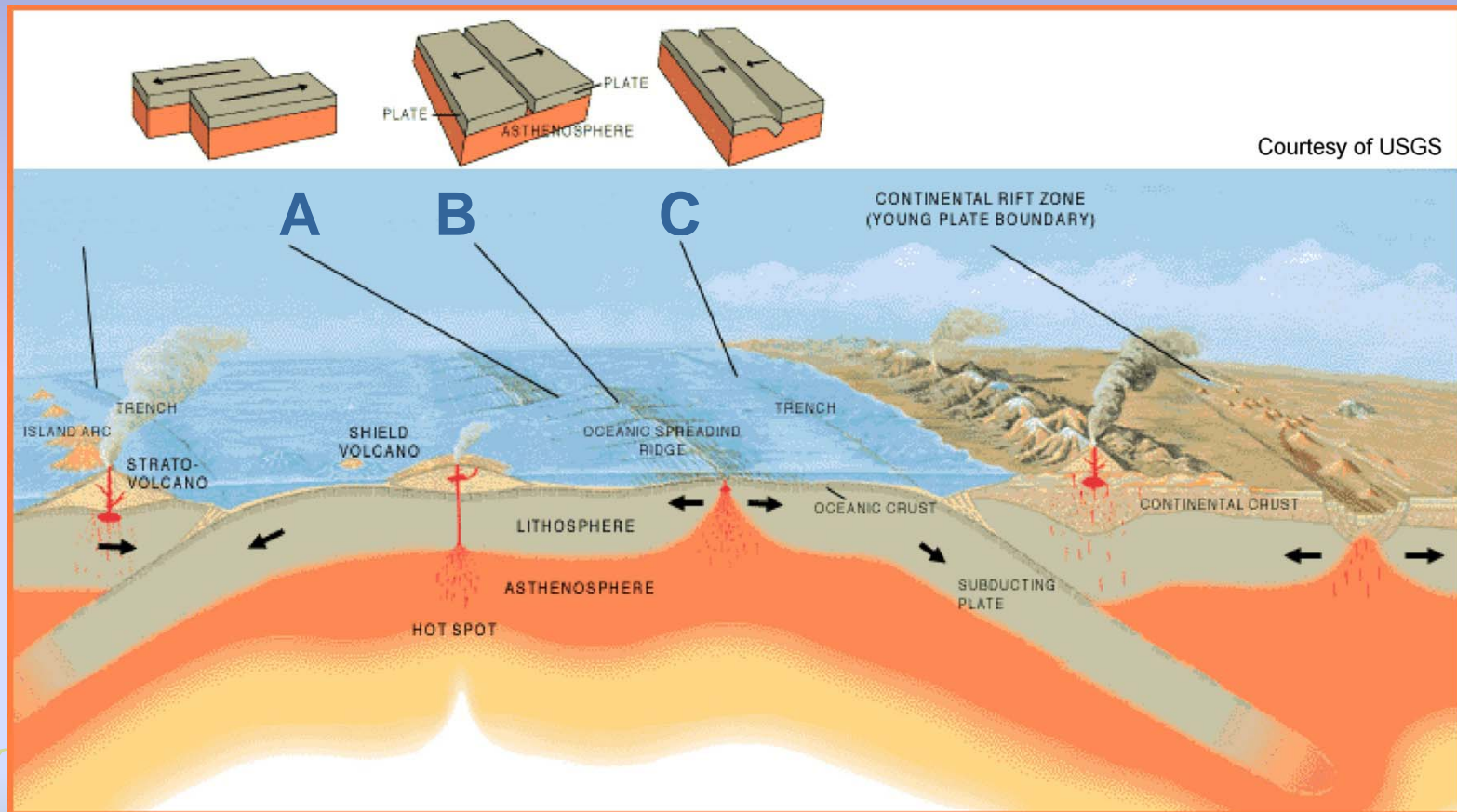
A



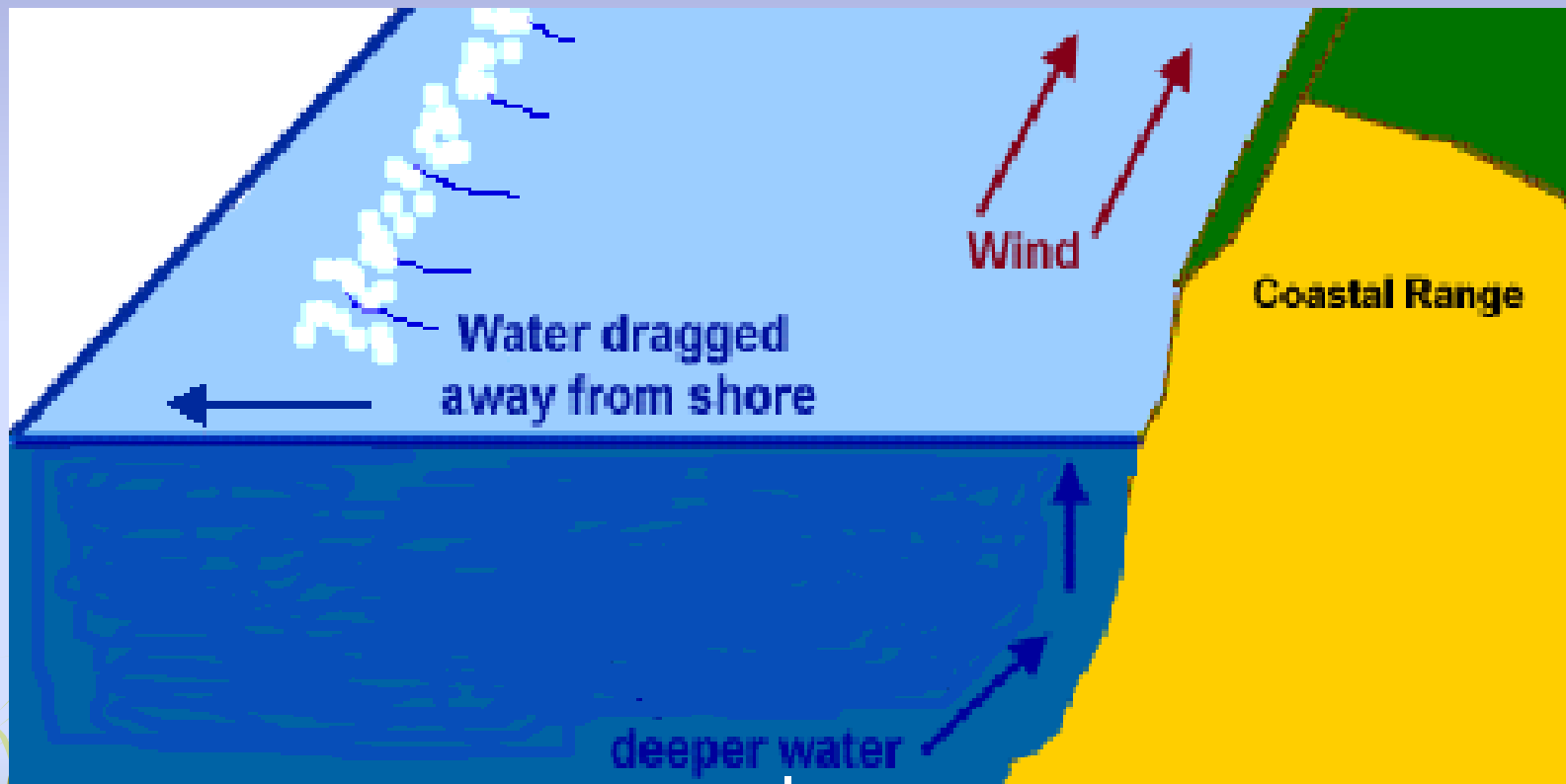
B



What types of plate boundaries does A, B, and C represent?



Identify the process here and give its significance.



[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/elN/upw.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/elN/upw.rxml)