Greater Expanse of All Ocean Water Mass - Vertical Circulation

Antarctic to Sub Artic - ABW

- coldest and deepest H2O in Ocean

Antarctic Surface H2O

Between 40 degrees south and Antarctica

60 - 80 meters in Atlantic to 150 mm in Pacific

(Seasonal Range)

Water Mass Defined by Temperature, Pressure & Salinity

Temperature at 1.8 C to 3.5 C

Salinity: 33% 34.7%
(Difiers in Atlantic & Pacific)

Circumpolar Mass - Belt

500 - 600 in deep - (surface H20)

.5 C @ 34.7 salinity

Differs in Atlantic and Pacific. Much mixing of this ?0 in both salinity and 02

AIW (Antarctic Intermediate ?0 less dense than ABW)

(ABW-North of Antarctic Convergence (photo convergence)

West Wind Drift by product

Temperature at 1.9 C at 34.62

Medl-hO - Warm and Salinty

13 C at 37.0 saline (why?)

Much mixing in straits of Gibraltar

H20 is Saline - off of Rub - Al - Kali

NA DW North Atlantic Drift (Current) is the cause

NA BW not found in Pacific

(No cold current ofBeiring sea)

Water Masses are dependent upon Salinity, Temperature,

And Pressure if-

NA Central IhO (30-40 degrees North)

Temperature = 8 degrees Celsius at 35 Salinity

Temperature = 19 degrees Celsius at 36.7 Saline

South of Greenland & Iceland to Cape Hatteras & Bay of Biscay

Formed in N/A (interaction with the atmosphere)

H20 sink in density slope

Thickness oflense proportionate to width of currents (900m thick)

In Saragasso Sea (200m to 900m)

Seasonal Convergence

South American Central HzO (30 - 40 degrees south)

Temperature 6 degrees Celsius at 34.5 Salinity

Temperature 18 degrees Celsius at 36.0 Salinity

(Greater Landmass in North than Southern Hemisphere)

Argentina to Angola

Because ofIfcO Temperature found as far north as 5 degrees north)

Thickness of == 600 miles (max)

Wider in east northwest in west Antarctica convergence

Ocean Circulation

a. Base surface circulation of oceans is wind driven ocean currents roughly

conforming to planetary wind and wind circulation

b. Ocean circulation is circular or gyral shaped in all major oceans

c. Gyre may take a figure 8 form d. Ocean surface current has thermal properties derived from winds

generating the current