

## **Antarctic Ocean:**

Ocean surrounds continent circumpolar circulation

ABW - 35 degrees North

Arctic Ocean (60 degrees North)

Low depth - average 3/4 of a mile

Salinity less than 3.0%

Sea Ice 5-9 feet thick

Max 15 feet

Ice drifts NW

(7000 mi in 3 years)

Saline: salt

Thermal: Heat or cold

Equilibrium of Sea H<sub>2</sub>O more dense than fresh

Cold H<sub>2</sub>O more dense than warm

Saltier and colder sinks

Vertical currents: Upwelling

(Cold off) Peru, Calif, West Africa,

Based on convergence or divergence

Overturn: heavy surface H<sub>2</sub>O sinks

Arctic Surface H<sub>2</sub>O - arctic surface H<sub>2</sub>O, Atlantic H<sub>2</sub>O, Arctic Deep H<sub>2</sub>O

Surface H<sub>2</sub>O: 32-33% (Norwegian Fjord and Islands)

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29.0% + River runoff ft in snow melt

Deep 3-4 degrees Celsius 75-400 meters

Sub-Antarctic water: South of subtropics

Caribbean (Krill and squid): Relationship to whales

52 degrees south to 53 degrees south

Slight analogue in North Hemisphere

Low salinity (circumpolar)

Not too well defined

Saline Current

North Pacific & Subartic ocean

Temperature at 2 degrees to 4 Celsius at. 32.0% salinity

Off of California

Coast (California Current)

Pacific Central H2O

Similar to Atlantic Circulation

At 16 degrees Celsius has lava salinity 35.6 to 36%

No Pacific lowest salinity

Ice melt & River Flow

Equatorial Pacific H2O

Broad Belt (20 degrees north to 20 degrees south)

Temperature at 15 degrees Celsius to 35 Salinity

Temperature at 8 degrees Celsius to 34.6 Salinity

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