

Flashcards for Oceanography

Formation of a Density Current	1) Warm water moves toward the poles, 2) as water freezes, salt builds up under the ice, 3) colder saltier seawater is more dense and sinks toward the ocean floor.	Great Pacific Garbage Patch sequence	1) Surface ocean currents moved by the wind and are deflected around continents, 2) circular ocean currents create a closed loop, 3) floating trash collects in ocean gyres, 4) marine animals become tangled in debris or eat plastic.
Cause & Effects of Sea Level Changes	1) Global warming raises temperatures worldwide, 2) sea levels rise, 3) more flooding on beaches and barrier islands, 4) people protect their shoreline property with stabilization like jetties, grasses, or groins	Processes leading to Ocean Acidification	More CO ₂ is given off from the burning of fossil fuels, 2) Greenhouse gases are dissolved in seawater, 3) the pH of ocean water drops and marine life is harmed.
The Gulf Stream	Moves warm water along the US east coast toward the poles - moderates climate of England	The California Current	Moves cold water toward the equator along the west coast of the US
a ocean gyre	3 or more wind-driven surface currents that create a closed circular loop when deflected around continents	Density of seawater	Increases when the water is colder and more salty Decrease temperature & increase salinity
Cause sea levels to rise	Melting glaciers and warming oceans	Coastal climates	Are more mild because they are moderated by nearby ocean water
Density currents	Flow along the floor of oceans; very salty and cold, Ex North Atlantic Deep Water	Salinity	A measure of the dissolved salts in ocean water. High salinity= more dense (sinking) seawater
Temperature profile	A plot of changing water temperatures with depth	Thermocline	A transitional layer of the ocean about 200m deep that has rapidly decreasing temperatures
Carbon dioxide CO ₂	Contributes to the acidification of ocean water	Surface ocean currents	Blown by the wind, deflected around continents, and directed by the Coriolis Effect-earth's rotation
What we expect to happen to sea level	Global temps continue to rise, sea levels rise, depth of oceans increases and coastlines flood	Hard shoreline stabilization	Concrete seawalls, stone jetties, man-made structures built to prevent beach erosion
Policy and planning shoreline stabilization	Laws, buy-backs, set-backs along coasts to prevent destruction of property	Soft shoreline stabilization	Planting dune or marsh grasses, natural coir fiber logs or oyster shell reefs to prevent erosion
Hybrid stabilization	A combination of soft and hard shoreline erosion prevention	Barrier islands	Like the Outer Banks of NC, built when longshore currents deposit long ridges of sediment to form island chains
Spit	narrow bank of sand deposited at the bend in a coastline	Garbage patches	Found in all ocean gyres, floating trash is blown by surface winds into a debris island
The Ocean Conveyor Theory (Thermohaline Circulation)	explains how cold, salty, deep water circulates from Antarctica to move heat throughout the world's oceans	Decrease salinity	Precipitation, runoff from freshwater rivers, melting of sea ice or glaciers
An upwelling	A rising current of seawater, usually along coasts, that bring nutrients to the surface	Coriolis Effect	The movement of ocean water to the right or left due to Earth's rotation and the ocean's hemisphere
Prevent beach erosion	Seawalls, jetties, groins, and breakwaters are built to..	Estuary	An area where a fresh water river empties into an ocean. Brackish water mixes fresh and salt water.