

Chapter 15 Study Guide

Earth's Systems

Biosphere	Life: Part of Earth where life exists (living and nonliving parts) <ul style="list-style-type: none"> • biota: collection of just living things in biosphere
Lithosphere	Terrain: features of Earth's surface (continents, rocks, sea floor, below surface)
Atmosphere	Atmosphere: air blanketing Earth's solid and liquid surface
Hydrosphere	Water: all of Earth's water, ice, water vapor
(Note) Gaia hypothesis : Earth itself is like a living organism because all systems are connected	

Climate

Climate: prevailing weather of a region		Why?	
Key factors:		Is Earth heated unevenly?	Curved shape, so hottest portion where sun strikes directly (equator)
Temperature	Sunlight		
Water (moisture)	Wind	Are there seasons?	Earth tilts on its axis
Weather	Day-to-day conditions	Are there water & wind currents?	Uneven heating makes warm air/water rise and cold sink Warm air holds more rain
Microclimate	Climate of small specific place within larger area	Are coastal areas moderate?	Oceans cause smaller changes in temperature
Climate Zones		Orographic Effect	Mountain blocks passage of rain, leaving leeward side (away from wind) a dry shadow
Polar Zone	Far north and south regions		
Tropical Zone	Surrounds equator		
Temperate Zone	Wide area btwn polar & tropical		

Biomes

Characterized by abiotic factors and ecosystems	
Climatogram : describes climate by measuring average temperature and precipitation	
Tropical Rain Forest	Abundant precipitation year-round, warm temperatures, lush forests, biodiversity
Grassland	Grass as primary plant life
Desert	Little precipitation , arid, 4 types (hot, semi-arid, coastal, cold)
Temperate Forests	Deciduous trees (lose leaves in winter) as dominant plant species, includes deciduous forests and rain forests, hot summers and cold winters (deciduous)
Taiga	Long winters & short summers , cool north climates, little precipitation
Tundra	Permafrost , far north latitudes with long winters, limited precipitation
Minor Biomes	Chaparral : hot, dry summers and cool, moist winters
Not Biomes	Polar ice caps (no soil or specific plant community), mountains

Water Zones

Ocean Zones	Photic zone : receives light Aphotic zone : does not receive light
Coral Reefs	Found in tropical zone, warm water, large biodiversity, problem = coral bleaching
Kelp Forests	Found in cold water, nutrient-rich waters, problem = global warming
Estuary	Partially enclosed body of water where a river flows into the ocean
Anthropogenic	Caused or influenced by humans
Eutrophication	Extra nutrients from fertilizer run off into rivers. Algae blooms feed off nutrients and blanket water, blocking the sun. Algae runs out of food and dies, sun-dependent organisms die. Bacteria feed off of dead material and population grows; new nutrients continue cycle Bacteria deplete oxygen, making ocean anoxic , causing death of all organisms