

20th century humans doubled the amount of nitrogen in global nitrogen cycle

-Nitrogen oxides, photochemical smog, acid deposition

Phosphorous cycle: the global circulation of phosphorus from the environment to living organisms and back to the environment

Sulfur Cycle: sulfur in sedimentary rocks and minerals- erode over time, enters the atmosphere from ocean, land, and volcanoes

Coal burning= bad

Hydrologic cycle: water circulates from ocean to atmosphere to land to ocean

-Runoff, watershed, groundwater *Aerosol cans hurt this cycle

SOLAR RADIATION

Sun's energy is a product of nuclear fusion reaction

Albedo: proportional reflectance of solar energy from Earth's surface, commonly expressed as a percentage

-Glaciers, ice sheets reflect 80-90% of sunlight

Tilt of Earth= temperature changes

THE ATMOSPHERE

-Invisible layer of gases

Oxygen 21%, Nitrogen 78%

-Protects surface from ultraviolet radiation, X-rays

Troposphere: layer of atmosphere closest to Earth's surface

-Weather, most clouds are here

Stratosphere: found directly above the troposphere

-Commercial jets, steady winds

mesosphere

thermosphere

Weather conditions in atmosphere at a given place and time

Climate= typical weather patterns

Rainshadow: dry conditions that occur on leeward side of a mountain barrier

Plate tectonics: the study of the process by which the lithospheric plates move over the atmosphere

-Plate boundary, divergent plate boundary, convergent plate boundary, subduction, transform plate boundary

Chapter Five

Evolution: cumulative genetic changes that occur over time in a population of organisms; evolution explains many patterns of distribution and abundance displayed in the natural world

-Aristotle

Natural Selection: process in which better-adapted individuals are more likely to survive and reproduce, increasing their proportion in the population

-Charles Darwin, "Origin of Species by Means of Natural Selection"

1. High reproductive capacity'
2. Heritable variation
3. Limits on population growth, struggle for existence
4. Differential reproductive success