

Organism



an individual living thing that uses energy, reproduces, responds, grows, and develops

Species

a group of similar organisms that can breed and produce fertile offspring

Population



group of individuals of the same species that live in the same area

Community



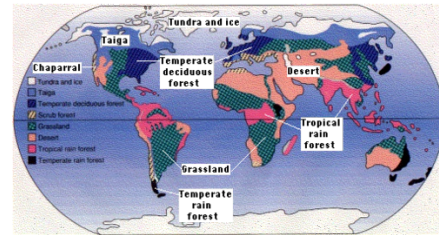
all living, or biotic, things in an area

Ecosystem



all biotic (living) and abiotic (nonliving) things in an area

Biome



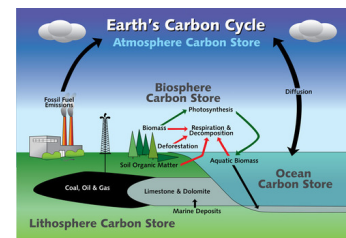
group of ecosystems that have the same climate and dominant communities

Biosphere



part of Earth in which life exists including land, water, and air or atmosphere

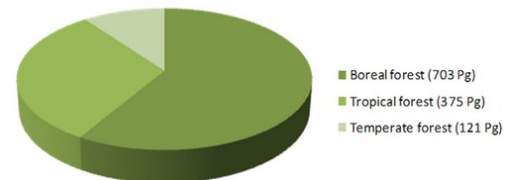
Carbon cycle



the continuous process by which carbon is exchanged between organisms and the environment

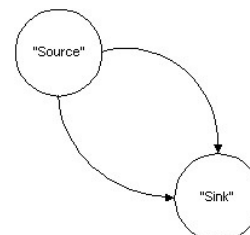
Reservoir (or sink)

Carbon storage by global forest biomes



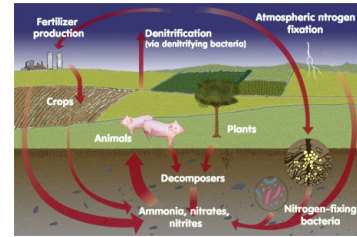
a place where anything (ex. carbon) is collected, accumulated, or stored in great amount

Source vs. sink (or reservoir)



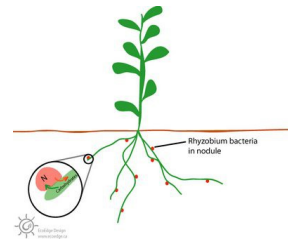
regions or processes that predominately produce CO₂ are called sources (ex. burning fossil fuels or cutting down forests), while those that absorb CO₂ are called sinks (ex. rainforests or phytonlankton in oceans)

Nitrogen cycle



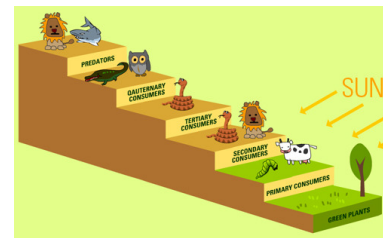
the continuous process by which nitrogen is exchanged between organisms and the environment; nitrogen fixation is the most critical part of the cycle for living things

Nitrogen-fixation



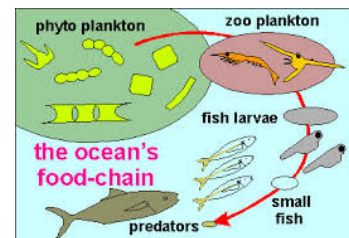
a process where various types of bacteria convert nitrogen gas from the atmosphere into a form of nitrogen that is usable by living organisms (we get nitrogen from the food we eat, not from the gas we inhale)

Trophic level



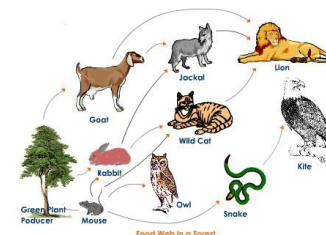
step in a food chain or food web

Food chain



series of steps in an ecosystem in which organisms transfer energy by eating and being eaten

Food web



network of complex interactions formed by the feeding relationships among the various organisms in an ecosystem

Ecological pyramid

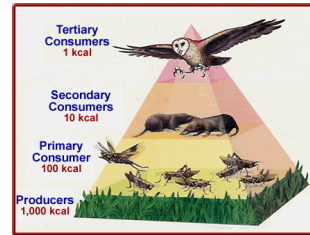
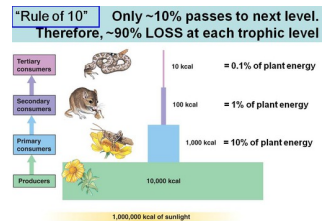


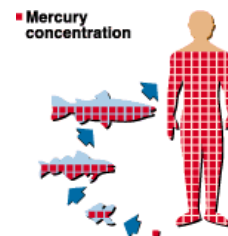
diagram that shows the relative amounts of energy or matter within each trophic level in a food chain or food web

10% Rule



Only 10% of the energy in one trophic level gets passed onto the next trophic level

Biological magnification



increasing concentration of a harmful substance in organisms at higher trophic levels in a food chain or food web

Producer



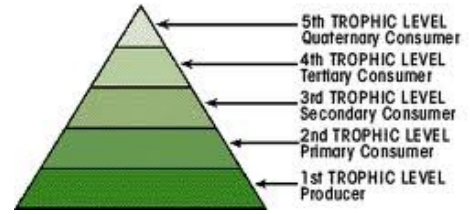
organism that can capture energy from sunlight or chemicals and use it to produce food from inorganic compounds; also called an autotroph

Consumer



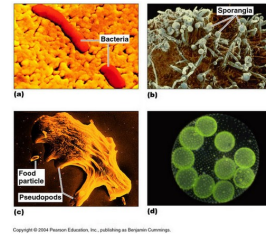
organism that relies on other organisms for its energy and food supply; also called a heterotroph

3rd level consumer



also called a tertiary consumer
BUT is on the 4th trophic level

Microorganism



an organism that is microscopic, or too small to be seen by the unaided human eye; examples include bacteria, archaea, most protists, and some fungi (viruses, although microscopic, are not considered microorganisms because they are non-living)

Decomposer



organism that breaks down and obtains energy from dead organic matter; primarily fungi and bacteria

Saprobe



typically a fungus that acts as a decomposer by absorbing nutrients from dead organic matter

Detritivore



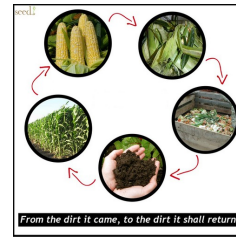
organism that feeds on plant and animal remains and other dead matter (ex. earthworms, crabs)

Detritus



nonliving organic matter; typically includes decaying dead organisms as well as fecal matter

Compost



organic matter that has been decomposed (detritus) and recycled as a fertilizer to help plants grow

Herbivore



organism that obtains energy by eating only plants

Carnivore



organism that obtains energy by eating animals

Omnivore



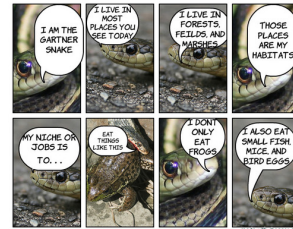
organism that obtains energy by eating both plants and animals

Habitat



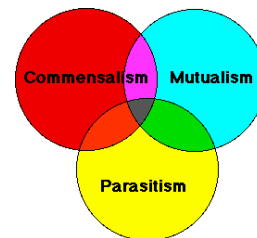
the area where an organism lives, including the biotic and abiotic factors that affect it

Niche



the unique way of life of a species; its job, function, or role in an ecosystem

Symbiosis



relationship in which two species live closely together

Mutualism



symbiotic relationship in which both species benefit from the relationship

Parasitism



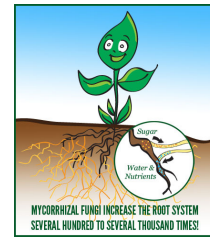
symbiotic relationship in which one organism lives in or on another organism (the host) and consequently harms it

Commensalism



symbiotic relationship in which one member of the association benefits and the other is neither helped nor harmed (ex. orchid in a tree)

Mycorrhizae



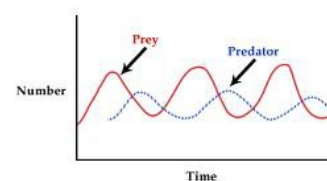
symbiotic association of plant roots and fungi

Predation



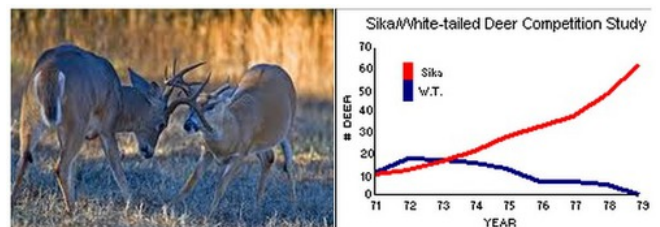
interaction in which one organism captures and feeds on another organism

Predator vs. Prey Graph



as the # of prey (eaten) increases the # of predators (eater) increases; and vice versa

Competition



the simultaneous demand by two or more organisms for limited environmental resources, such as nutrients, living space, or light

Non-native species (invasive species)

an introduced, invasive organism (plant, animal, fungus, protist, or bacterium) that has negative effects on our economy, our environment, or our health

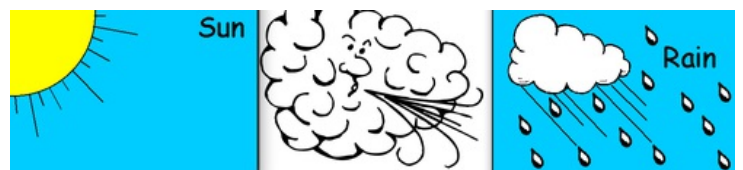
Limiting factor

factor that causes the growth of a population to decrease or not grow any larger (ex. food, water, shelter, predation, disease, etc.- abiotic or biotic factors)

External factor

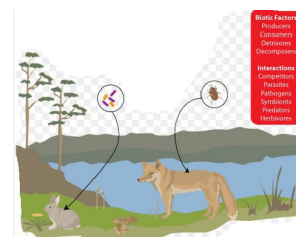
any living or nonliving factor that impacts the survival of an organism, population, or community (can be a limiting factor or a non-limiting factor)

Abiotic factor



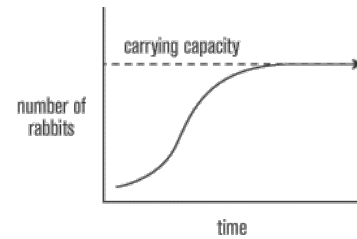
physical, or nonliving, factor that shapes an ecosystem

Biotic factor



biological (living) influence on organisms within an ecosystem

Carrying capacity



largest number of individuals of a population that a given environment can support

Endangered species



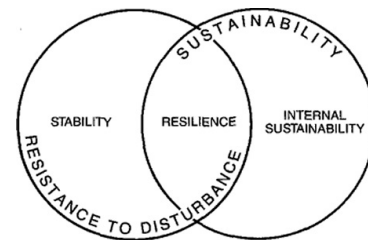
species whose population size is rapidly declining and will become extinct if the trend continues

Extinct



term used to refer to a species that has died out

Ecosystem stability



refers to a steady state, or dynamic equilibrium, where conditions are held more or less constant by systems operating in the ecosystem

Pollutant



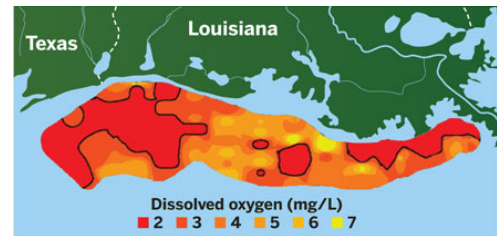
harmful material that can enter the biosphere through the land, air, or water

Algal bloom



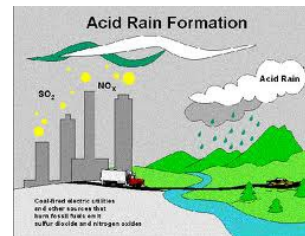
an immediate increase in the amount of algae and other producers that results from a large input of a limiting nutrient

Dead zone



the indirect result of nutrients, largely from fertilizer use, running off into rivers and then into bodies of water such as the gulf; this occurs after an algae bloom when bacteria consume all of the oxygen from eating the algae (image result from Mississippi River runoff)

Acid rain



rain containing nitric and sulfuric acids

Overfishing



the act whereby fish stocks are depleted to unacceptable levels, regardless of water body size; results in resource depletion, low biological growth rates, and critically low biomass levels

Deforestation



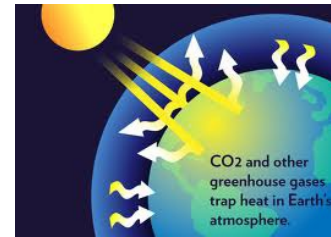
destruction of forests

Habitat fragmentation



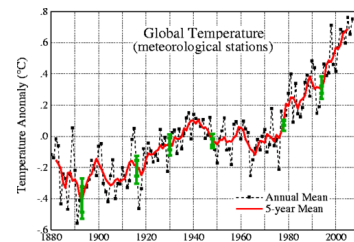
splitting of ecosystems into small fragments

Greenhouse effect



natural situation in which heat is retained in Earth's atmosphere by carbon dioxide, methane, water vapor, and other gases

Global warming



increase in the average temperatures on Earth

Biodiversity



biological diversity; the sum total of the variety of organisms in the biosphere

Primary succession



succession that occurs on surfaces where no soil exists

Pioneer species



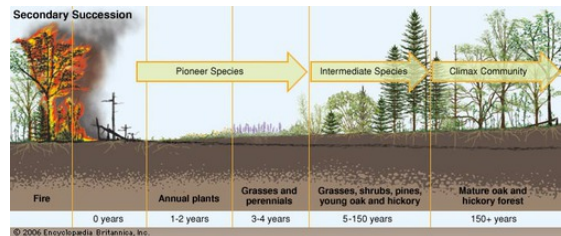
first species to populate an area during primary succession; for example a lichen

Lichen



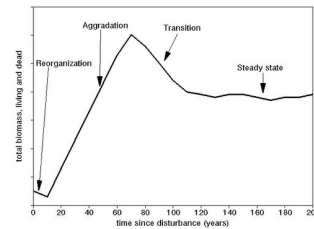
symbiotic (mutualistic) association between a fungus and a photosynthetic organism

Secondary succession



succession following a disturbance that destroys a community without destroying the soil

Climax community



a biological community of plants and animals and fungi which, through the process of ecological succession (the development of vegetation in an area over time) has reached a STEADY STATE