

## ECOLOGY UNIT 1 VOCABULARY WORDS

**PCBs:** Polychlorinated Biphenyls used in electronics. Chemical products banned in 1979. Polluted groundwater.

**Quantitative Data:** data that uses numbers

**Qualitative Data:** data that uses qualities and characteristics to describe

**Experimental Design:** set up of an experiment

**Control:** constant variable and unchanged throughout the course of the investigation.

**Easter Island:** an island owned by Chile where people died because of lack of natural resources

**Ecology:** study of living organisms in their nonliving world

**Biotic factor:** living item (ex: bacteria)

**Abiotic factor:** not living item (ex:

**Ecological Hierarchy:** species → population → community → ecosystem → biome → biosphere

**Population:** a group of individuals of the same species

**Community:** a group of populations interacting together

**Ecosystem:** a group of communities interacting together

**Biosphere:** another name for earth

**Natural Selection:** survival of the fittest

**Chesapeake Bay Watershed:** Where Potomac River dumps into Atlantic Ocean. Extremely polluted with sediments and nutrients.

**Salinity:** level of salt in the water

**Brackish:** medium levels of salinity. Often occurs in wetlands where salt and fresh water mix.

**Potential Energy:** The energy stored.  $PE = mgh$

**Kinetic Energy:** The energy in movement:  $KE = \frac{1}{2}mv^2$

**1<sup>st</sup> Law of Thermodynamics:** Energy is not created nor destroyed...changes forms

**2<sup>nd</sup> Law of Thermodynamics:** No reaction is 100% efficient. Entropy is created after every energy transformation.

**Entropy:** Disorder and chaos in a system.

**Gaia hypothesis:** organisms interact with their inorganic surroundings on Earth to form a synergistic self-regulating, complex system that helps to maintain and perpetuate the conditions for life on the planet

**Divergent Plate Boundary:** Where 2 plates separate. Creates mid-ocean ridges and rift valleys. New rock made here.

**Convergent Plate Boundary:** Where 2 plates collide. Creates mountains (cont hit cont) or subduction zones (ocean goes under cont). Rock destroyed here.

**Transform Plate Boundary:** Where two plates slide past each other. If they get stuck, creates stress. Release of stress is an earthquake.

**Ecological footprint:** a measure of human impact on Earth's ecosystems. It's typically measured in area of wilderness or amount of natural capital consumed each year.

**Carrion:** the decaying flesh of dead animals

**Phototrophs:** organisms that use light to perform photosynthesis. Often plants and phytoplankton.

**Chemotrophs:** organisms that use chemicals to perform chemosynthesis. Often bacteria in deep sea vents.

**Heterotrophs:** organisms that consume to obtain energy. Often herbivores and carnivores.

**Primary Consumer:** first level heterotroph, eat primary producers

**Secondary Consumer:** organism that eats primary consumer

**Tertiary Consumer:** organism that eats secondary consumer

**Saprotrophs:** organism that eats dead organic materials (fungi and bacteria)

**Food Chain:** a series of who eats whom with one pp, one pc, one sc, one tc

**Food Web:** a diagram of who eats whom for all organisms

**Gross Primary Productivity:** the rate of photosynthesis taking place in an area

**Net Primary Productivity:** The biomass left over in a phototroph after photosynthesis and respiration takes place.

**Nitrogen Fixation:** Taking nitrogen in air ( $N_2$ ) and changing to nitrite ( $NO_2$ ) or ammonia ( $NH_3$ )

**Nitrification:** Take nitrite and turning it into nitrate  $NO_3$

**Assimilation:** Organisms use nitrate and ammonium to make DNA and amino acids.

**Ammonification:** Taking  $NH_3$  and turning it into  $NH_4$ .

**Denitrification:** Taking nitrate and ammonium and turning it back into nitrogen ( $N_2$ ) in the air.

**Sink:** a storage place of an element

**Source:** a process that releases an element.

**Primary Succession:** community change that occurs with new land formation: lichen → moss → small shrubs → small trees → large trees → climax community

**Secondary Succession:** community change that occurs with land already formed.

**Bottleneck Effect:** cut down of genetic diversity due to loss of individuals in a population.

**Non-native species:** a species that is not known historically in an area. Ex: cane toads in Australia

**Species diversity:** a count of how many species are in an area.

**Ecotone:** a transitional zone between two communities. Ex: intertidal zone.

**Niche:** an organism's job in a community.

**Hybrid:** the offspring of two different species.

**Lichen:** a symbiotic relationship of a fungus and an algae

**Germination:** sprouting of a seed

**Mutualism:** a symbiosis where two species benefit from the relationship. Ex: oxpecker and rhino

**Commensalism:** a symbiosis where one species benefits and the other is neutral in the relationship. Ex: cattle egret and cow

**Parasitism:** a symbiosis where one species benefits and the other is harmed in the relationship. Ex: tapeworm and human

**Competitive Exclusion Principle:** species with the same niche in the same area cannot coexist

**Tragedy of the Commons:** theory of a situation within a shared-resource system where individual users acting independently and rationally according to their own self-interest behave contrary to the common good of all users by depleting that resource

**Keystone Species:** often a dominant predator whose removal allows a prey population to explode and often decreases overall diversity. Ex: sea otter

**Predation:** the preying of one animal on others.

**Mimicry:** the close external resemblance of an animal or plant (or part of one) to another animal, plant, or inanimate object

**Interspecific Competition:** competition between two different species.

**Intraspecific Competition:** competition the same species.

**ANWR:** Arctic National Wildlife Refuge. Debate for oil exploration.

**Aerobic:** using oxygen

**Anaerobic:** using no oxygen