Ecology Vocabulary

● Biotic - Living

● Abiotic - Nonliving

● Exponential Growth - The accelerated rate of growth of a population.

● Population Density - Number of individuals in a population relative to a given space within an ecosystem.

● Limiting Factors - Factors in an environment that limit a process; particularly the growth, abundance or distribution of a population of organisms in an ecosystem.

● Density-Dependent Factor - Any factor limiting the size of a population whose effect is dependent on the number of individuals in a given space. For example, disease will have a greater effect in limiting the growth of a large population, since overcrowding facilitates its spread.

● Density-Independent Factor - Any factor limiting the size of a population whose effect is not dependent on the number of individuals in the population. An example of such a factor is an earthquake, which will kill members of the population regardless of whether the population is small or large.

● Carrying Capacity - The maximum population size that can be supported by the available resources, symbolized as K.

● Dynamic Equilibrium - When population numbers remain constant due to similar birth and death rates. A system in a steady state since forward reaction and backward reaction occur at the same rate.

● Habitat - The area or type of environment in which a particular kind of animal or plant usually lives.

● Niche - An ecological role that an organism occupies within an ecosystem. Examples

include: Producer, Consumer, and Decomposer.

● Global Warming - The recent increase in the Earth's average temperature caused by increased levels of greenhouse gases.

● Deforestation - The mass removal of plants from a given ecosystem.

● Biomagnification / Bioaccumulation / Biological Magnification - The process whereby certain substances such as pesticides or heavy metals move up the food chain. Toxins make their way into rivers or lakes, and are eaten by aquatic organisms such as fish, which in turn are eaten by large birds, animals or humans. This process concentrates the toxin as it moves through a decreased number of organisms in upper trophic levels.

● Nonbiodegradable - A substance that can not be broken down into simpler substances.

● Biodegradable - A substance that can be broken down into simpler substances.

● Innate - An inborn or natural response to a stimulus.

● Migration - The movement of organisms from one location to another.

● Habituation - A form of learning in which an organism decreases or ceases to respond to a stimulus.

● Imprinting - Type of phase sensitive learning where newborn organisms form attachments; usually to a parent or trusted individual.

● Classical Conditioning - A form of learning in which a neutral stimulus becomes associated with a certain response. (Pavlov’s dogs)

● Operant Conditioning - A form of learning where a positive or negative reinforcement is used to develop a learned behavior. (Skinner Box)

● Territoriality - Behaviors of animal(s) whereby it protects its territory.

● Courtship - Behaviors displays by animals to ensure mating/reproduction.

● Pheromones - Chemical substances produced by organisms that influence other organisms; particularly in courtship and mating.

● Energy Pyramid - A graphical representation of energy flow in an ecosystem.

● Law of 10% - Only 10% of total energy is transferred to the next trophic level in the food web/chain.

● Ecosystem - A community of living organisms.

● Heterotrophic - An organism that obtains its food by ingesting or absorbing it.

● Autotrophic - Organisms that are able to produce their own food.

● Producer - Organisms that can make their own food; autotrophs.

● Consumer - Organisms that must ingest food to obtain energy.

● Nitrogen Cycle - The process by which nitrogen is converted between its various chemical forms. Important processes in the nitrogen cycle include fixation, ammonification, nitrification, and denitrification.

● Nitrogen Fixing Bacteria - Bacteria that have the ability to convert nitrogen gas into usable forms such as nitrates and nitrites. Common examples are rhizobia found in nodules on the roots of legumes.

● Decomposer - An organism whose ecological function (niche) involves the recycling of nutrients within an ecosystem.

● Carbon Cycle - The combined processes of photosynthesis, decomposition, and respiration, that allows carbon and oxygen to be recycled in an ecosystem

● Greenhouse Effect - The increase in carbon dioxide above the surface of the earth that functions to trap solar energy radiating back into the atmosphere.

● Sustainability - The ability for an ecosystem or resource to remain productive and diverse.

● Predator - An upper level consumer that feeds on a lower level consumer (Examples:

Owl and lemming, Lynx and hare).

● Prey - An organism that is being hunted by a predator.

● Competition - An interaction between organisms or species, in which there is a limited supply of a resource (such as food, water, mates, and territory).

● Host - An organism that harbors a symbiont. The relationship with the symbiont could be considered mutualistic, parasitic or commensalistic.

● Symbiosis - Two different organisms have a specific relationship with each other.

● Mutualism - A symbiotic relationship in which two organisms both benefit (+ / +). ● Commensalism A symbiotic relationship in which one organism benefits and the other is neither harmed nor benefits (+ / 0)

● Parasitism - A symbiotic relationship in which one organism benefits and the other is harmed (+ /)

● Native - An organism that occurs naturally in a particular environment. ● Invasive An organism that becomes part of an environment and competes with native species for resources. Ex: kudzu in NC, boa constrictors in the Florida Everglades

● Carnivore - An organism that eats meat.

● Herbivore - An organism that eats plants.

● Omnivore - An organism that consumes both plants and meat.

● Diurnal - An organism that is active during the day.

● Nocturnal - An organism that is active at night.

● Endothermic - An organism that has the ability to regulate its own metabolism by producing its body heat internally.

● Exothermic - An organism whose metabolism is regulated by external temperature.

● Chemotaxis - Movement of an organism in response to a chemical. Movement can be positive (toward) the stimulus or negative (away) from the stimulus.

● Phototaxis - Movement of an organism in response to light. Movement can be positive (toward) the stimulus or negative (away) from the stimulus.

● Tropism - A plant's response to a specific stimulus.

● Phototropism - A plant's response to light (plants bend toward light).

● Hydrotropism - A plant's response to water (roots will grow in the direction of a water source).

● Thigmotropism - A plant's response to contact (Ivy will grow up a brick wall).