

GLOSSARY AND CREDITS

Wherever you go in our world, you can study ecology. Many sciences are included in ecology because it involves the *relationships* among all living things, their *environments*, and the forces that alter the environments. Plants, animals, and people depend on each other and the environment for survival.

In this unit, you will study ecology, challenges facing the environment, and current and future biotechnologies, gaining a sense of how important all life is and how biology has helped us to understand it and help it.

VOCABULARY

abiotic	nonliving
activational effects	short-term hormonal influences on animal behavior usually occurring late in life
altruism	unselfish behavior of an individual that looks after the group before itself
Batesian mimicry	coloring of a species that resembles dangerous organisms, which helps it to ward off predators
biodegradable	any substance that can be decomposed by bacterial action
biome	major ecological grouping of plants and animals
biotechnology	science and engineering techniques used to manipulate living cells to produce useful products
biotic	living
carnivore	a flesh-eating animal
carrying capacity	the total number of organisms that an ecosystem can handle

classical conditioning	a technique that associates a natural response to a stimulus to an unrelated stimulus; also called Pavlovian conditioning
cloning	a method of genetic engineering that makes a copy of a living organism or its parts
commensalism	a symbiotic relationship between two organisms in which one species benefits and no effect is apparent to the other species
community	the interacting populations within a geographic area
decomposers	bacteria and fungi that break down dead matter
DNA profiling	identification of individuals based on their DNA profile
dynamic equilibrium	a state of change in which the end result is equal or balanced
ecological niche	the role or position of an organism in an ecosystem
ecology	the knowledge or life science that studies how living things depend on each other and their environment; the relationships of an organism with its total environment
ecosystem	the basic relationships that show how a community of plants, animals, and bacteria live and grow and how these living things are dependent on each other as well as the Sun, soil, and other nonliving parts of their environment; a cycle of relationships
environmental factor	a condition or conditions of the nonliving surroundings, such as light, temperature, water, and so on
ethology	the study of animal behavior in its natural environment

exponential growth	population growth based on the reproduction capability of individuals, despite available resources
fauna	all the animal life of a region
flora	all the plant life of a region
food chain	line of plants and animals that shows the order in which organisms are eaten
food web	a diagram that shows the connections among food chains in an ecosystem
genetic engineering	any artificial change made to the genetic composition of an organism
geothermal	heat energy coming from inside the Earth; heat from volcanoes or geysers
green revolution	a phrase used to describe programs involving the breeding of new high-yield varieties of food crops to increase world food production
habitat	a place where an organism naturally lives or grows
habituation	when an animal learns not to respond to a stimulus
herbivore	an animal that feeds on plants
Human Genome Project	a worldwide scientific project that deciphered the DNA code of all the human chromosomes of the body
hybridization	cross-breeding; a method that unionizes gametes of differing genes to create a new individual
insightful learning	finding a solution to a once unsolvable problem

K-selected	species that are adapted to live in equilibrium at carrying capacity
kineses	random movement by animals due to environmental conditions
latent learning	learning that has taken place but is dormant until a situation requires it
logistic growth	population growth that reaches equilibrium and carrying capacity
monogamy	having one mate for a whole life span
mortality	death rate
Müllerian mimicry	coloring of dangerous organisms advertised to ward off predators
mutualism	a symbiotic relationship between two organisms in which both species receive some type of benefit
natality	birth rate
omnivore	an animal that eats both plants and animals
operant conditioning	a technique that uses rewards to increase a learned behavior
optimality theory	a theory that behavior evolves to promote the greatest fitness for the animal
organizational effects	long-term hormonal influences on animal behavior usually occurring early in life
parasitism	a relationship between two or more organisms of different species in which one benefits and the other is harmed

phoresy	a commensalistic relationship in which one organism is transported by another
pollution	the act of contamination; making dirty or unclean
polyandry	when females mate with multiple males
polygyny	when males mate with multiple females
population	a group of interacting individuals of the same species within the same geographic area
population density	the number of organisms living in a particular area
primary consumer	organisms that eat producers
producer	any green plant that traps the Sun's rays and converts them to chemical energy
r-selected	species that are adapted to maximize their reproductive rate despite carrying capacity
recombinant DNA	cultured DNA molecules from different biological sources
secondary consumer	organisms that eat primary consumers
selective breeding	a process of breeding organisms because of their specific traits
serial monogamy	having one mate at a time but many mates over a life span
social learning	learning a behavior by observing and watching others
symbiosis	two organisms living in a close relationship with each other
taxis (pl. taxes)	movement toward or away from a stimulus
tertiary consumer	predator that eats secondary consumers