Ecology

Ecology - The study of how living things and their environment interact.

Ecosystem – All the living and non-living things in an area and their interactions with each other.

Biomes: An ecosystem that cover large areas of land, and has certain types of plants, animals, soil and climate. For example, the rainforest or the desert.

Photosynthesis – The process by which green plants make their own food by using energy from the sun.



Producers: Plants or tiny organisms that use photosynthesis to make their own food.

* Examples: flowers, trees, algae, plankton, basically any green plant

Consumers: An organism that eats plants or other animals for energy

Examples:

* Herbivores: An animal that eats only plants
  + Examples: cows, elephants, zebras, giraffe, koala, deer
* Carnivores: An organism that eats only other animals
  + Examples: lions, lady bugs, moray eel, crab spider, chameleon, lion fish, tigers, praying mantis, owls, puffins, pitcher plant
* Omnivores: an animal that eats both plants and animals
  + Examples: humans, raccoons, catfish, mice, bears, ducks, pigs, sea gulls,
* Scavengers: A meat-eating animal that feeds on the remains of dead animals
  + Examples: hyenas, vultures, crayfish,
* Parasites: An organism that takes food, and sometimes shelter, from other living things
  + Examples: tape worms, mosquitoes, hook worm, fleas, ticks

Decomposers: Organisms that break down the bodies of dead plants and animals into useful substances like minerals in rich soil.

* Examples: mushrooms, fungus, beetles, pill bugs, slugs, earthworms, snails, molds, millipedes, bacteria

ALL ENERGY STARTS WITH THE SUN!!!!

Food Chain: The path of the energy in food from one organism to another. The arrow points to the flow of energy. It starts with the sun and travels to the producers, then the consumers, then the decomposers.



Food Web: The overlapping food chains in an ecosystem.

Predator: A living organism that hunts other living organisms for food.

Prey: A living organism that is hunted for food.

Symbiosis: a relationship between two kinds of organisms over time.

Parasitism: a relationship in which one kind of organism (a parasite) lives on and may harm another organism (host). For example, a dog and a flea or tick. The flea or tick lives and feeds on the dog and the dog is irritated and may be harmed.

Mutualism: a relationship between two kinds of organisms that benefits both. For example, bees drink nectar from flowers and carry away pollen which pollinates other flowers.

Commensalism: a relationship between two kinds of organisms that benefits one without harming the other. For example, a crab spider resembles flower petals to hide from prey. When insects land on the flower, they are quickly eaten by the spider and the flower is left unharmed.

Niche: the role of a species in a community.

Invasive species: is a non-native or alien to the ecosystem in which it’s found.

* Can be plants, animals, and other organisms (e.g., microbes).
* Human actions are the primary means of invasive species introductions.
* Have few natural predators and competitors
* Can destroy the habitat of native plants and animals

Satellite imaging:

* Invasive Species Forecasting System (ISFS) - observations from NASA satellites and NASA engineering
* Predicts quickly and inexpensively the location and spread of invasive plants over regional areas.
* Can look at remote, hard to reach areas
* Look at how the land has changed over time