

Environmental Science: Notes 2.1: Energy Flow in Ecosystems

Energy Roles

Three types of energy roles in an ecosystem

1) Producers- organisms that are able to produce and store their own food.

Most producers (plants, algae, some bacteria) get their energy from captured sunlight to produce their food through the process of photosynthesis.

A few producers (some bacteria) can get their energy from gases to produce their food, through a process called chemosynthesis.

2) Consumers- organisms that must get their energy from other organisms.

a) herbivores- organisms that get their energy by only eating plants.

Examples: moose, mice, cows

b) carnivores- organisms that get their energy by only eating animals.

Examples: wolves, orcas, lions

c) omnivores- organisms that get their energy from eating plants & animals.

Examples: humans, bears, ravens

Some carnivores are known as scavengers, those organisms that feed on the bodies of dead organisms. Examples: crab, vultures

3) Decomposers- organisms that break down wastes and dead organisms and return the raw materials back to the ecosystem.

Examples: mushrooms, bacteria

Food Chains and Food Webs

Diagrams such as food chains and food webs can show the movement of energy through an ecosystem.

Food Chains

Food chains show the series of events that occur as one organism eats another in order to obtain energy. The chain always begins with a producer, which is consumed by a first-level consumer, followed by a second-level consumer and so on.

Food Webs

Food webs show the complex interaction of organisms in which there are many overlapping food chains.

Energy Pyramids

Energy pyramids show the amount of energy that moves from one level to another in a food web. The most energy is available at the bottom, the producer level. As you go up on the pyramid the amount of energy available decreases.

