

# FEEDING RELATIONSHIPS...



## Energy Flow

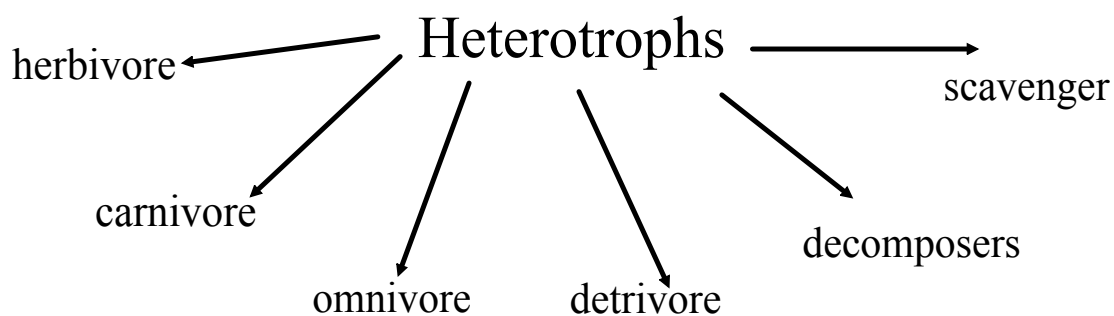
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- The flow of energy through an ecosystem is one of the most important factors that determines the system's capacity to sustain life.
- **Sunlight** is the main energy source for life on Earth. Some organisms rely on energy stored in inorganic chemical compounds.
- **Autotrophs** (producers) capture energy from sunlight or chemicals to produce their own food. **PHOTOSYNTHESIS**

carbon dioxide + water ---light---> carbohydrates + oxygen
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- Organisms that rely on other organisms for their energy and food supply are called **heterotrophs** (consumers). These include animals, fungi and bacteria.
- When organisms use chemical energy to produce carbohydrates, the process is called **chemosynthesis**. The process is performed by several types of bacteria that live in volcanic vents, hot springs and tidal marshes.



**Herbivores**, such as cows, obtain energy by eating only plants.

**Carnivores**, such as snakes, eat only animals.

**Omnivores**, such as humans, eat both plants and animals.

**Detrivores**, such as earthworms, feed on dead matter.

**Decomposers**, such as fungi, break down organic matter.

**Scavengers**, such as vultures, consume the carcasses of other animals.

## Feeding Relationships

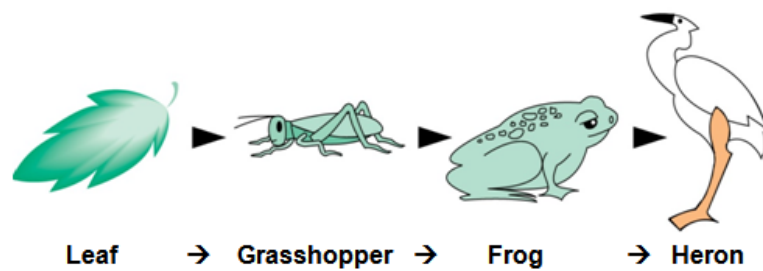
When one organism eats another, the energy in an ecosystem moves along a one-way path.

Energy Flows 

The energy stored by producers can be passed through an ecosystem along a **food chain**, a series of steps in which organisms transfer energy by eating and being eaten.

## Food Chain

The arrows in a food chain show what eats what. The arrow replaces the phrase "is eaten by." The direction of the arrow is very important. The arrow must point toward the "eater."



**Example #1 - Prairie Ecosystem**

grass → grazing antelope → coyote

**Example #2 - Marine Ecosystem**

algae → zooplankton → herring → squid → shark

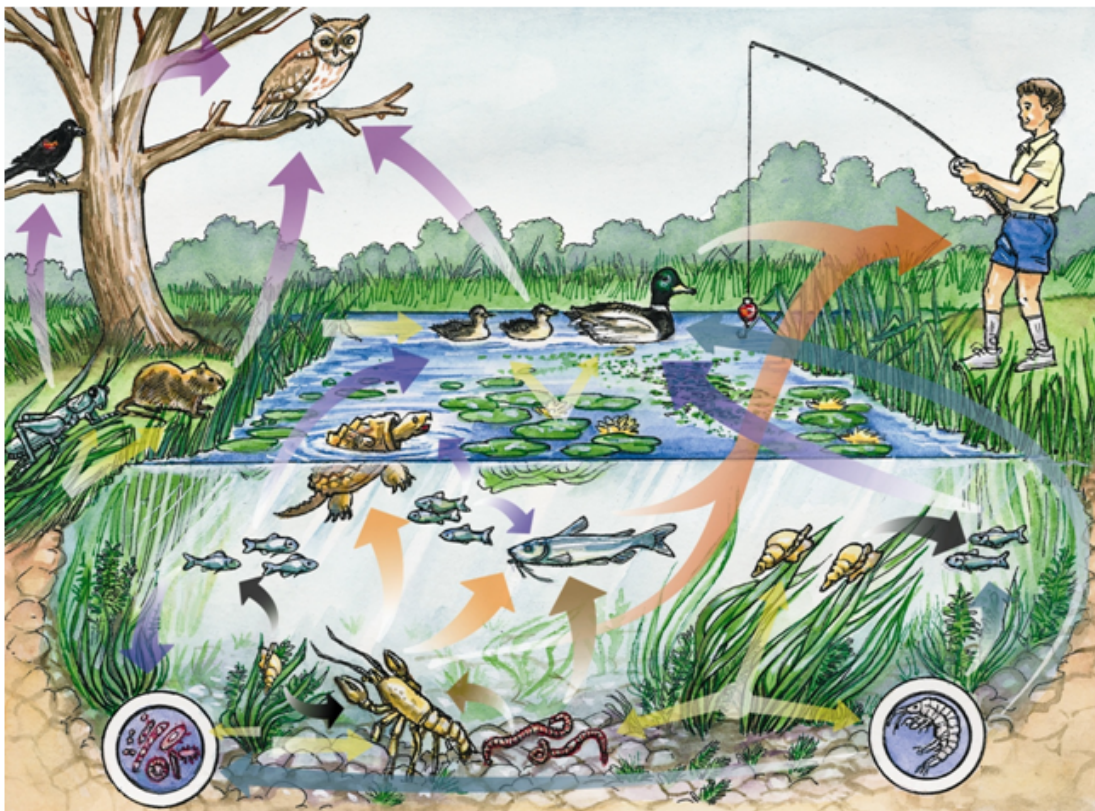
- In most ecosystems, feeding relationships are more complex than can be shown in a food chain.
- When the feeding relationships among various organisms in an ecosystem form a network of complex interactions, ecologists describe these relationships as food webs.

A **food web** links all the food chains in an ecosystem together...

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## Food Web

A food web shows the many possible food chains that exist in an ecosystem.





<http://safeshare.tv/w/sSWvtHMADh>

