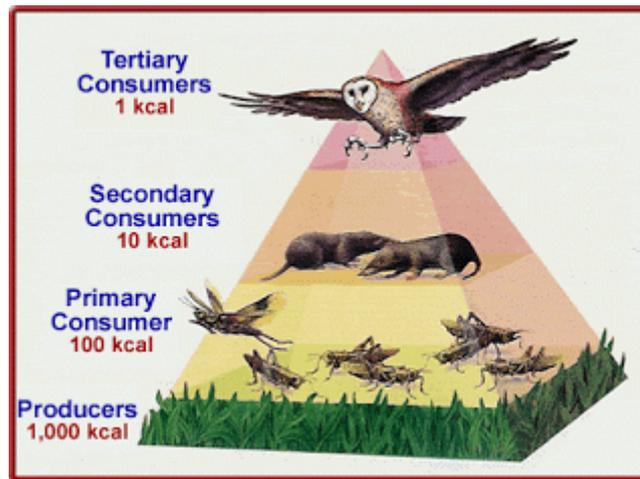


Trophic levels, food webs & energy in natural systems

Trophic Levels

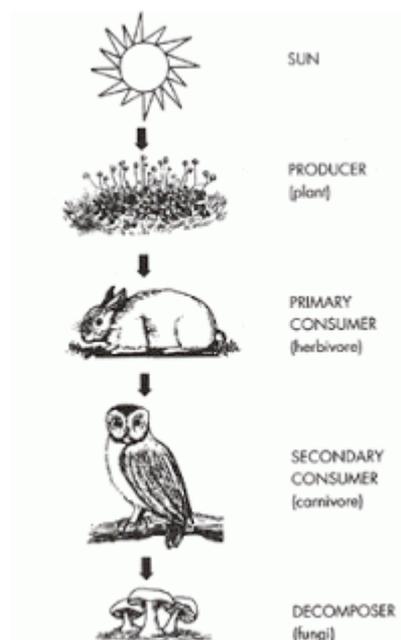
The different feeding levels of organisms in an ecosystem are called trophic levels. Producers make the first trophic level in all ecosystem. They capture energy from the sun and use it to produce their own food through photosynthesis.

Consumers form the second and higher trophic levels in the ecosystem. They cannot produce their own food and must obtain nourishment by eating other organisms. Primary consumers that eat producers form the second trophic level, secondary consumers form the third trophic level. Tertiary consumers the fourth etc. Omnivores and decomposers feed at all trophic levels.



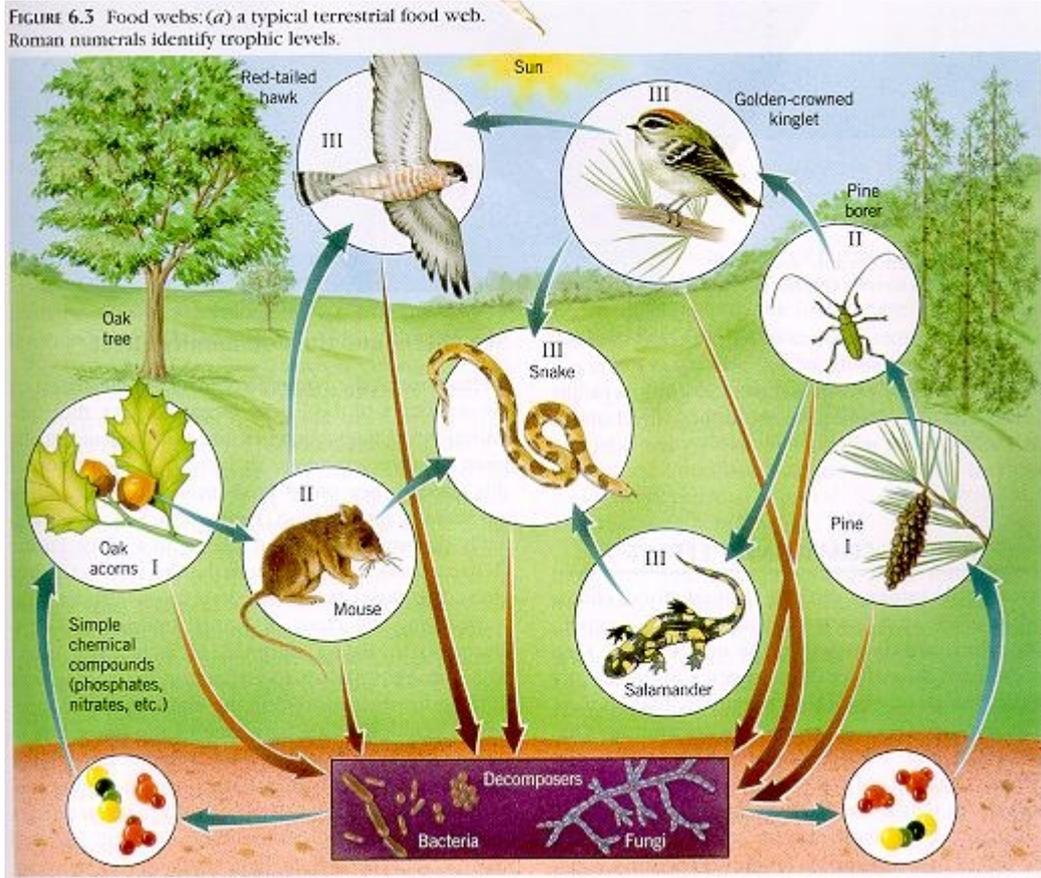
Food Chains & Food Webs

The feeding relationship among organisms at different trophic levels form a chain, the food chain. A food chain may be defined as a series of organisms that transfers food between the trophic level of an ecosystem. An example of food chain is shown below.



No ecosystem is simple enough to be represented by a simple food chain. As most consumers feed on more than one type of food and some consumers feed on more than one trophic level. A **food web** is a network of food chains representing the feeding

relationship among the organisms in an ecosystem:



Energy Flows

In an ecosystem energy flows occur in food webs; energy from food passes from one organism into another.

Producers use solar energy to power the photosynthesis reaction. This enables them to turn water and CO₂ into carbohydrates – a chemical form of energy. Consumers take in this energy when they eat producers or other consumers. In this way energy moves up from one trophic level to the next. At each level some energy is lost as heat due to some activities of organisms like keeping the body warm or other physical activities.

