Population - a group of organism of the same species who live in the same area at the same time.

Community - a group of populations living and interacting with each other in an area.

Ecosystem - a community and its abiotic environment.

Ecology - a study of the relationships between living organisms and between organisms and their environment.

Trophic level - the position of an organism in the food chain.

Few consumers feed on only one source of food. For example, the following food chain describes one set of feeding relationships.

Grass -> Beetle -> Tree keeper -> Sparrow hawk

But beetles eat a wide range of plants, tree keepers eat other types of insect and sparrow hawks eat other birds. This food chain can be in linked with many others. If food webs show a much more realistic picture of the feeding relations of the organisms in a habitat.



Arrows in a food chain show the direction of flow of both the energy and nutrients that keep organisms alive. Energy flow through an ecosystem can be quantified and analysed. These studies reveal that at each step in the food chain, energy is lost from the chain in various ways. Some is no consumed, some leaves the food chain as waste or when a animal dies and some is used by living organisms as they respire. In all three cases that lost energy cannot be passed to the next trophic level. Ecologists represent the transfer of energy between trophic levels in diagrams called energy pyramids. The width of each of the layers of the pyramid is proportional to the amount of energy it represents. Energy losses occur at every step of the food chain. Every link in the food chain results in loses so that eventually there will be insufficient energy to support any further trophic levels. Most food chains commonly contain between three and five organisms, the energy that enters an ecosystem as light is converted to chemical energy and finally lost as heat.

All the organic matter from an organism, including everything from living or dead material as waste is eventually consumed by other organisms. All the energy that enters the ecosystem as light energy and is trapped by photosynthesis. Nutrients on the other hand are continually recycled. A nitrogen atom may be absorbed as nitrate by plant roots and used to make and amino acid. The amino acid may be passed onto an animal when the plant material is eaten and then passed out of the animal's body during excretion. Soil bacteria