

Trophic levels and Ecological Pyramids

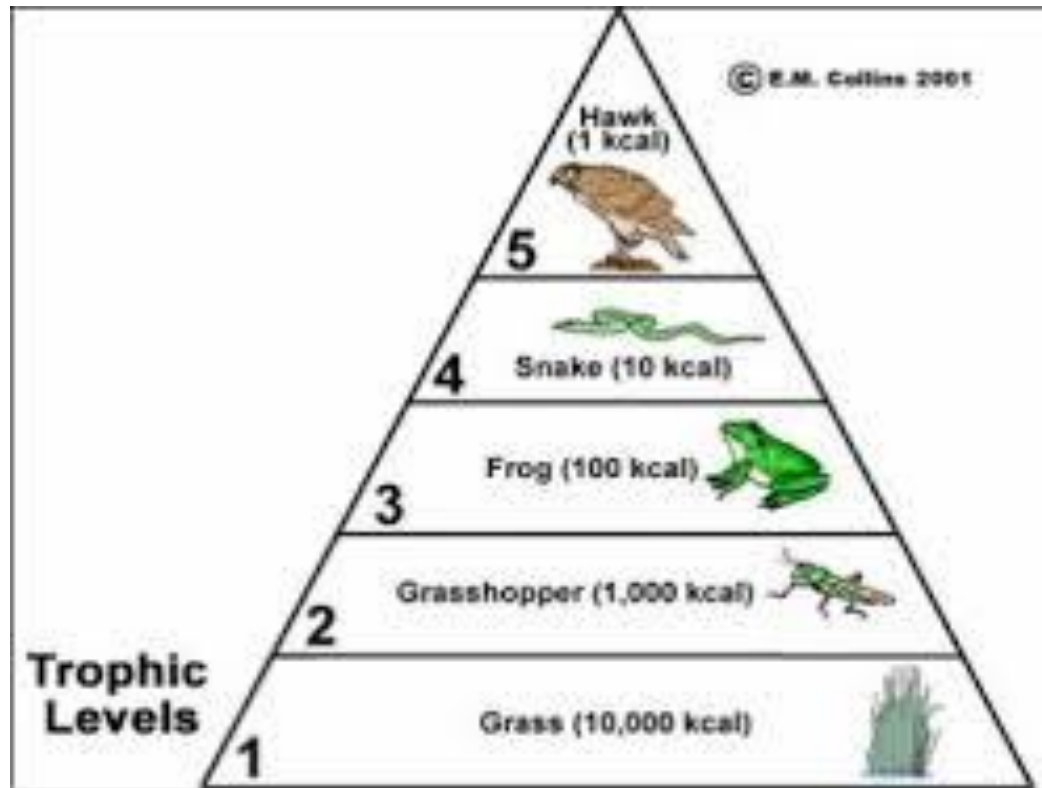
Trophic Levels

Each successive level of nourishment as represented by the links of the food chain is known as a trophic level. The plant producers within an ecosystem constitute the first trophic level, the herbivores form the second trophic level, and the carnivores represent the third level. Additional links in the main food chain, and inside chains such as those formed by parasites constitute further trophic levels.

Ecological Pyramids

- Ecological pyramids represent the trophic structure and also the trophic function of an ecosystem. In an ecological pyramid, the first trophic level forms the base and successive trophic levels the tiers which make up the apex. Ecological pyramids may be of three general type's

Trophic Levels



(1) Pyramid of numbers-

- It represents the numerical relationship between different trophic levels of a food chain. In such a pyramid, the more abundant species form the base of pyramid and the less abundant species remain near the top. The pyramid of numbers can be best understood by taking lake or grassland as an example.

(2) Pyramid of Biomass

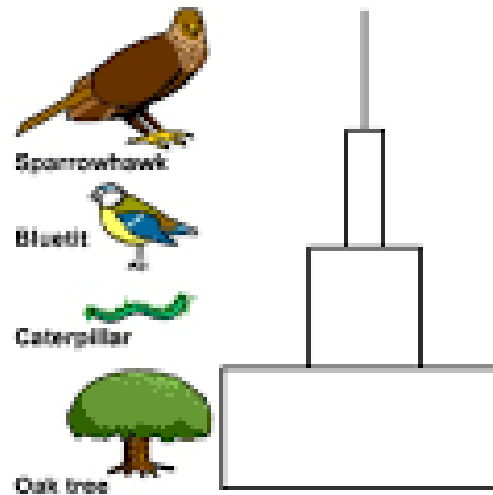
- The biomass i.e. the living weight of the organisms of the food chain present at any time in an ecosystem forms the pyramid of biomass. The pyramid of biomass indicates the decrease or the gradual reduction in biomass at each trophic level from base to apex.

PYRAMID OF BIOMASS

Pyramid of biomass

Ecologists draw a pyramid of biomass by weighing all the organisms at each stage of the food chain.

The mass of **producers** is larger than the mass of **consumers** to give a typical pyramid shape



(3) Pyramid of energy

- (3) Pyramid of energy It indicates the total energy at each trophic level of the food chain. It also exhibits that at each trophic level loss of energy and material takes place . The production rate of energy at
- different trophic levels of an ecosystem can be represented by the pyramid of energy. The base of such a pyramid is represented by the autotrophs i.e. green plants and the higher levels are represented by different herbivore and carnivore trophic levels.

PYRAMID OF ENERGY

