

Trophic organisation: A trophic level is the group of organisms within an ecosystem which occupy the same level in a food chain. There are five main trophic levels within a food chain, each of which differs in its nutritional relationship with the primary energy source, the primary energy source in any ecosystem is the sun.

The solar radiation from the sun provides the input of energy which is used by primary producers, also known as autotrophs. Primary producers are usually plants and algae, which perform photosynthesis in order to manufacture their own food source. Primary producers make up the first trophic level.

The rest of the trophic levels are made up of consumers also known as heterotrophs, heterotrophs cannot produce their own food, so must consume other organisms in order to acquire nutrition.

The second trophic level consists of herbivores, these organisms gain energy by eating primary producers and are called primary consumers.

Trophic level three consists of carnivores and omnivores which eat herbivores these are secondary consumers.

Trophic level 4 contains carnivores and omnivores which eat secondary consumers and are known as tertiary consumers.

Trophic level 5 consists of apex predators, these animals have no natural predators and therefore are at the top of the food chain.

Decomposers or detritivores are organisms which consume dead plant and animal material, converting it

into energy and nutrients that plants can use for effective growth. Although they do not fill an independent trophic level, decomposers and detritivores such as fungi, bacteria, earth worms and flies, recycle waste material from all other trophic levels and are an important part of a functioning ecosystem.

Due to the way that energy is utilized as it is transferred betⁿ levels the total biomass of organisms on each trophic level decreases from the bottom-up. Only around 10% of energy consumed is converted into biomass, whereas the rest is lost as heat, as well as to movement and other biological functions. Because of this gradual loss of energy, the biomass of each trophic level is often viewed as a pyramid, called a trophic pyramid.

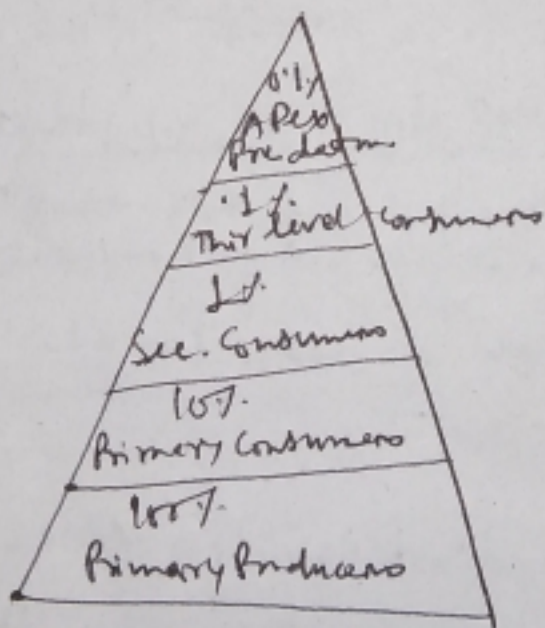


Fig Energy Pyramid.