

ECOSYSTEM
ECOLOGICAL PYRAMIDS

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- ❖ The concept of ecological pyramid was given by **Charls elton (1927)** hence they are also called eltonian pyramids.
- ❖ It is graphic representation of ecological parameters like number of individuals / biomass / energy in different trophic levels of food chain with producer at the base and top consumer to top.

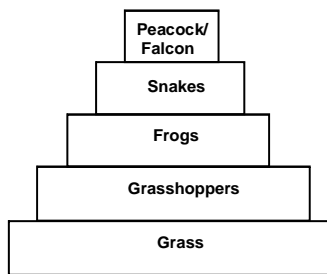


Fig: Pyramids of number in terrestrial ecosystem.

(a) Pyramids of Number :

- ❖ It is graphic representation of number of individuals per unit area in different trophic levels of a food chain.

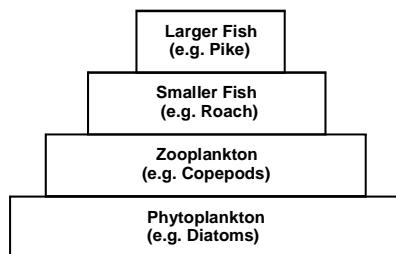


Fig: Pyramids of number in pond ecosystem—upright

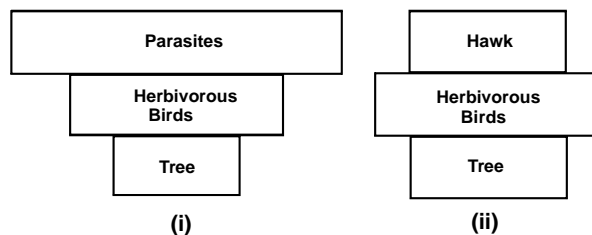


Fig: Pyramid of Numbers in Tree ecosystem
(i) inverted (ii) spindle shaped.

(b) Pyramid of Biomass :

- ❖ It is graphic representation of amount of biomass per unit area in different trophic levels of food chain.

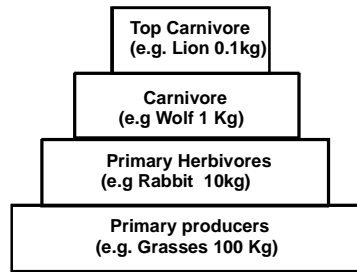


Fig: Pyramid of biomass in grassland–Upright

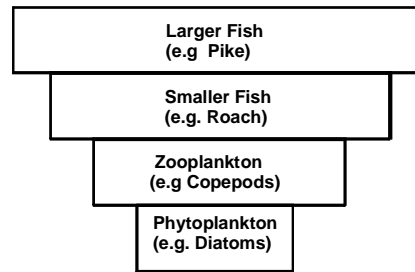


Fig: Pyramids of Biomass in pond ecosystem–Inverted

(c) Pyramid of energy :

- ❖ It is graphic representation of amount of energy trapped per unit area and time in different trophic levels of a food chain. It is always upright in all the ecosystems.

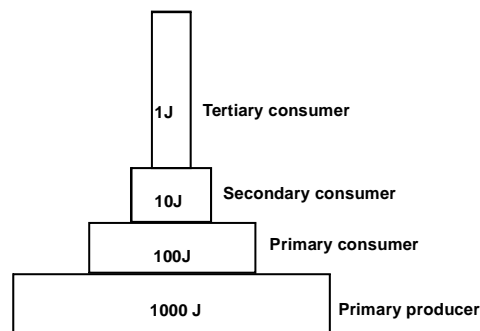


Fig: Pyramid of energy–Always upright

However, there are certain limitations of ecological pyramids such as it does not take into account the same species belonging to two or more trophic levels. It assumes a simple food chain, something that almost never exists in nature; it does not accommodate a food web. Moreover, saprophytes are not given any place in ecological pyramids even though they play a vital role in the ecosystem.