

15 Our Environment.

Types of waste:

Bio-degradable:- It is the waste that is broken down by biological processes. For eg. spoilt food, veg., peels, paper, leather.
 → They do not pollute the environment.

Non-bio degradable:- These are those wastes cannot be broken down by the biological processes. For eg. glass bottles, metal cans, polythene bags,
 → They continue to pollute the environment.

Atmosphere:- (AIR content)

O₂, CO₂, N₂ ... etc

Hydrosphere:- (water content) we
 water vapour, river, lake

Lithosphere:- (solid content)
 sand, earth.

Bio-sphere:- (Living organisms)

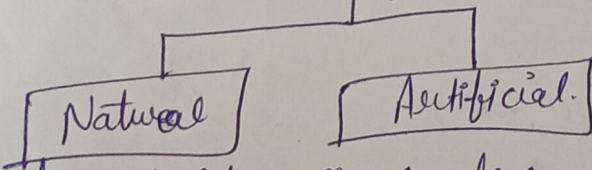
animals, plant, human, aquatic animal, various

Components of an Ecosys.	
Abiotic Comp.	Biotic Comp.
→ All the non-living things make the abiotic comp.	→ All living being make biotic comp.
→ Air, water & soil	→ Green plants play the role of producers bcz they prepare food by photosynthesis.
→ water is essential for all living being bcz all the metabolic activities happen in the presence of H ₂ O.	→ Animals & other living play the role of consumers bcz they take food from plants.
→ Soil is the reservoir of various nutrients which are utilised by plants. Though plants these nutrients reach to the soil through their living being.	→ Bacteria & fungi:- they decompose dead remains of plants & ani. so that waste material of origin can be channelized back to the soil.

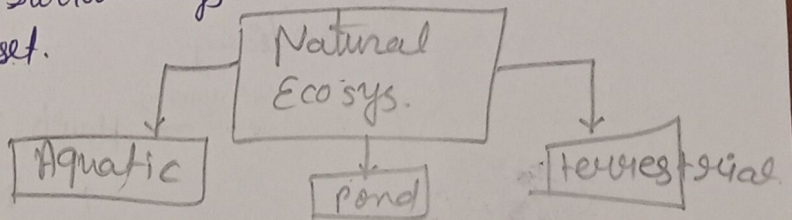
Eco system:- All plants & animals in a particular area considered together with their surroundings.

For eg. lake, pond, river, forest.

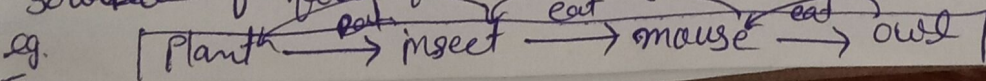
Ecosys.



eg. forest, lake eg. Garden
 - Aquarium

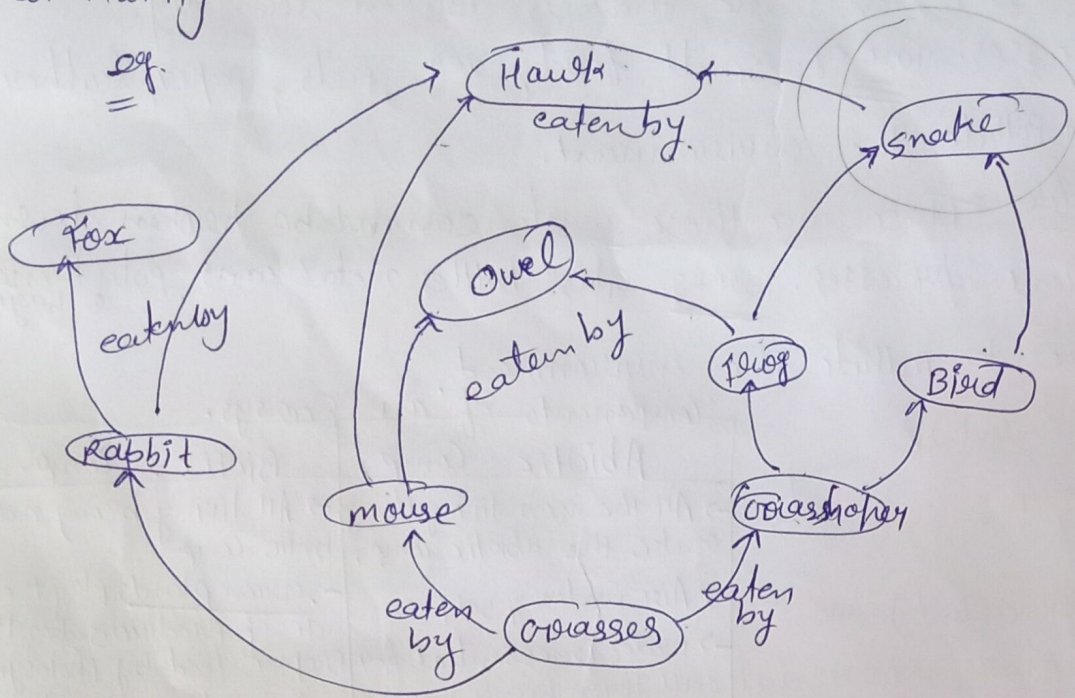


Food chain:- A food chain is the series of organisms in which each creature eats the one below it in the series & become a source of food for the organisms above it.



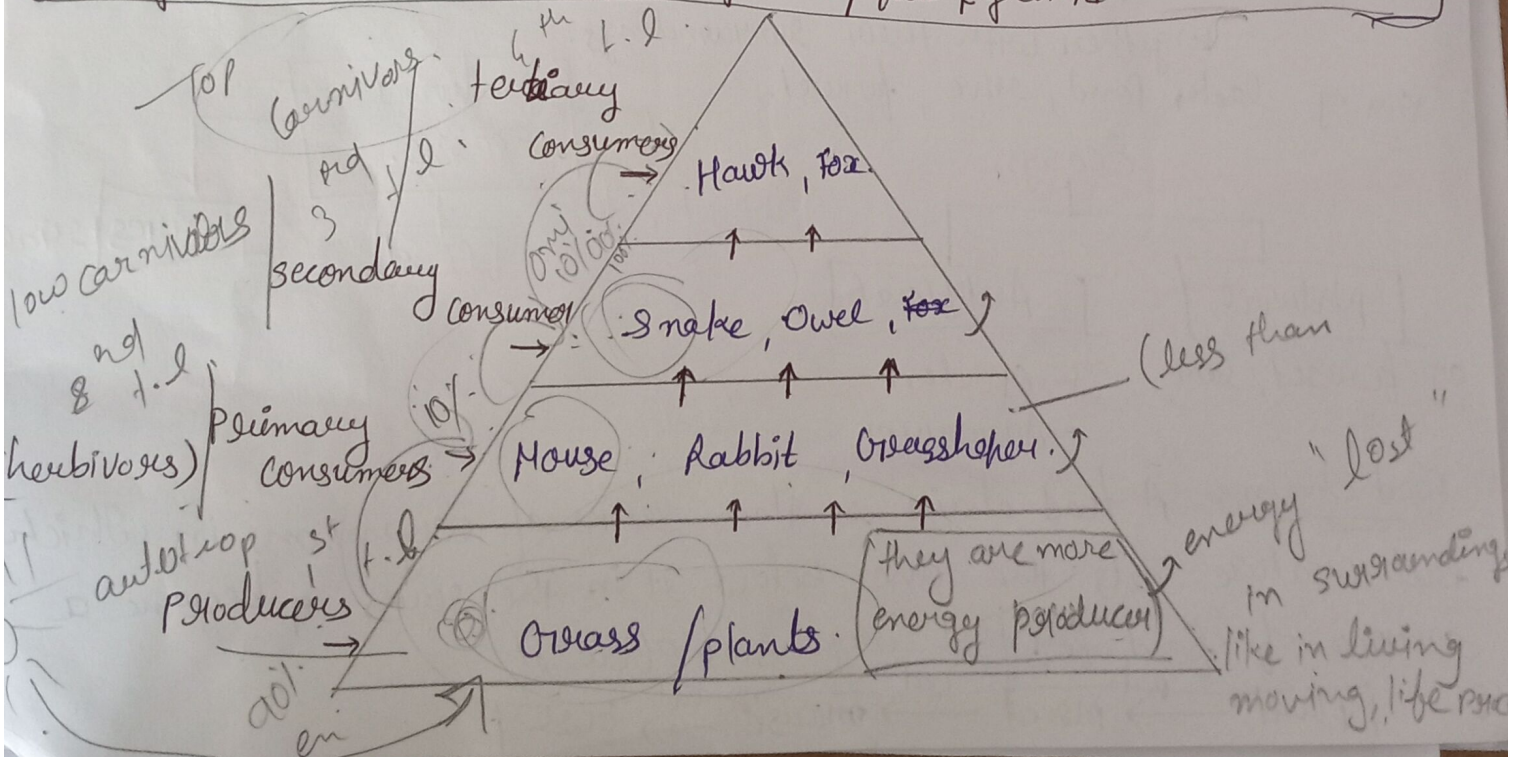
Food chain is sequential process of eating & being eaten. A food chain represents the unidirectional transfer of energy.

Food web :- is the natural interconnection of food chains & a graphical representation of what-eats-what in an ecological community

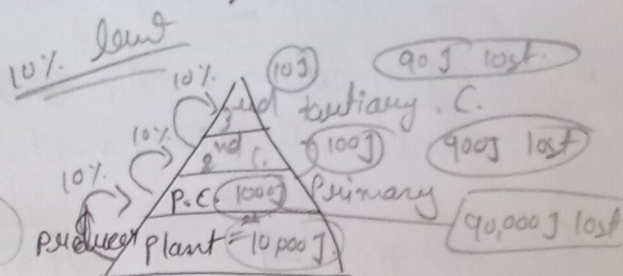
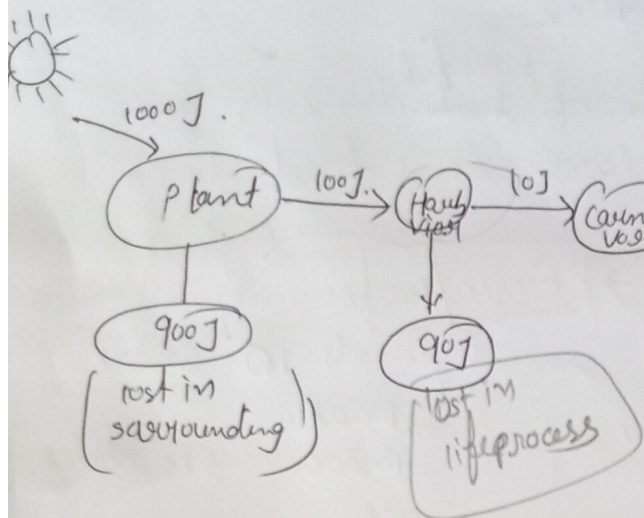


Food Pyramid :- (it shows energy level) is representation of the optimal no. of servings to be eaten each day from each of the basic food groups. (how much energy swift to another trophic level)

A graphical represⁿ of various trophic levels of a food chain in an ecosys. is called an ecological pyramid / food pyramid



→ During the transfer of organic food from one trophic level to the next, only about 10% of the organic matter is stored as flesh. The remaining is lost during transfer or broken down in respiration.



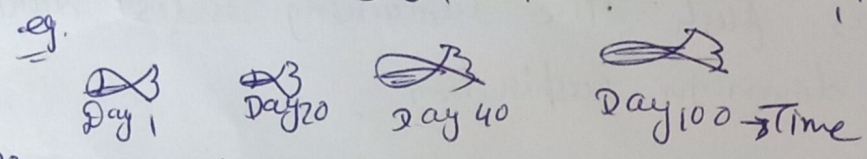
Energy Flow in Food chain

- In a food chain, along with food, transfer of energy also occurs from one trophic level to the other. The flow of energy which occurs along a food chain is called energy flow.
- All the energy used by a living org.^m is obtained from the sun. Solar energy enters the living comp. through the autotrophs or green plants. However only 1% of the total energy is actually captured by green plants.
- The amt. of energy gradually declines as one moves up to the next higher trophic level, because at each level, energy is lost in the form of heat.

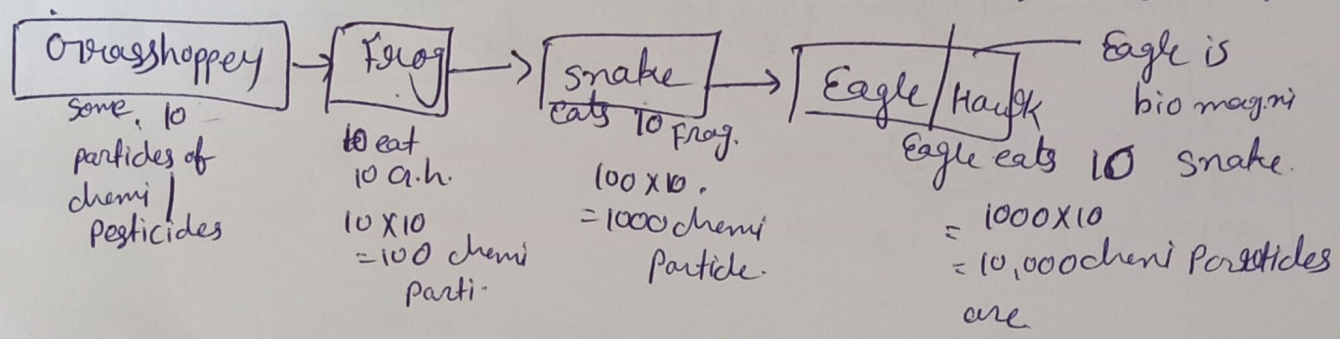
The loss of energy in food chains the transfer of energy from one trophic level to the other can be explained by the 10% law which states that "only 10% of the energy entering a particular trophic level of org.^m is available for transfer to the next higher trophic level."

200 kcal
10%

Bio-accumulation is gradual accumulation of substances such as pesticides or other chemicals, in an org.^m.



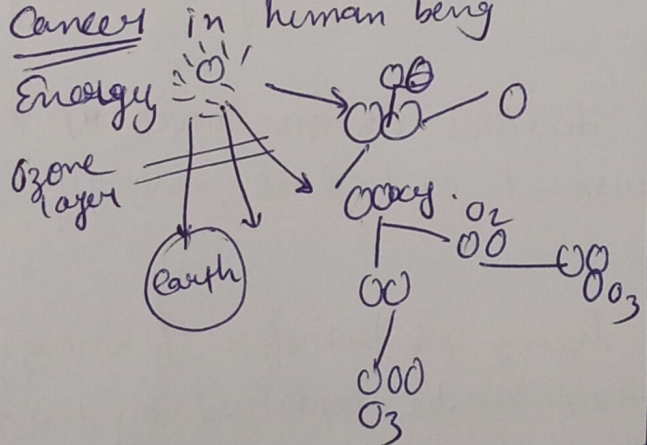
Bio-magnification :- The concentration of ~~such~~ ^{harmful} chemicals get increases with every next trophic level in a food chain.



Depletion of Ozone layer

What is ozone?

- Ozone is a molecule formed by 3 atoms of oxy.
- it shield the surface of the earth from UV radiation from the sun.
- The radiation is highly damaging to org.^m For eg. cause skin cancer in human being.

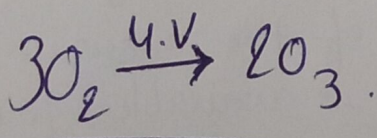


How was it formed? CFC (coolant gas) depleting the ozone layer

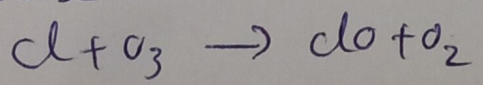
$O_2 \xrightarrow{UV} O + O$

$O + O_2 \rightarrow O_3$

1. UV rays split a Chlorine atom away from CFC (chlorofluorocarbon) molecule.
2. The chlorine atom breaks up an ozone molecule, making a hole in the ozone layer.
3. The molecules left behind are chlorine monoxide & oxygen.



Reverse reaction



Extra que.

"Our Environment"

Que. What is Environmental pollution?

Que. Distinguish betⁿ biodegradable & non biodegradable pollutants.

Que. Choose the biodegradable pollutants from the list given below:
sewage, DDT, Radioactive waste, agricultural waste

Que. The primary consumers are _____
= ① Carnivores ② Omnivores ③ Herbivores ④ Producers

Que. Why is ozone layer getting depleted at the higher levels of the atmosphere?

Que. State 2 problems caused by the non-biodegradable waste that we generate in our daily life.

que. Which of the following is the best way for disposal of veg. & fruit peels?

① landfill ② Recycling ③ composting ④ Burning

que. Explain biological magnification with the help of an example.

que. Describe how decomposers facilitate recycling of matter in order to maintain balance in the ecosystem.

que. Accumulation of non-biodegradable pesticides in the food chain in increasing amt. at each higher trophic level is known as

① Eutrophication ② pollution ③ bio-magnification ④ accumulation