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Our Environment

→ Environment

It is the surrounding where organisms live.

Environment is a just place in time.

An organism's environment changes as it moves from one place to another.

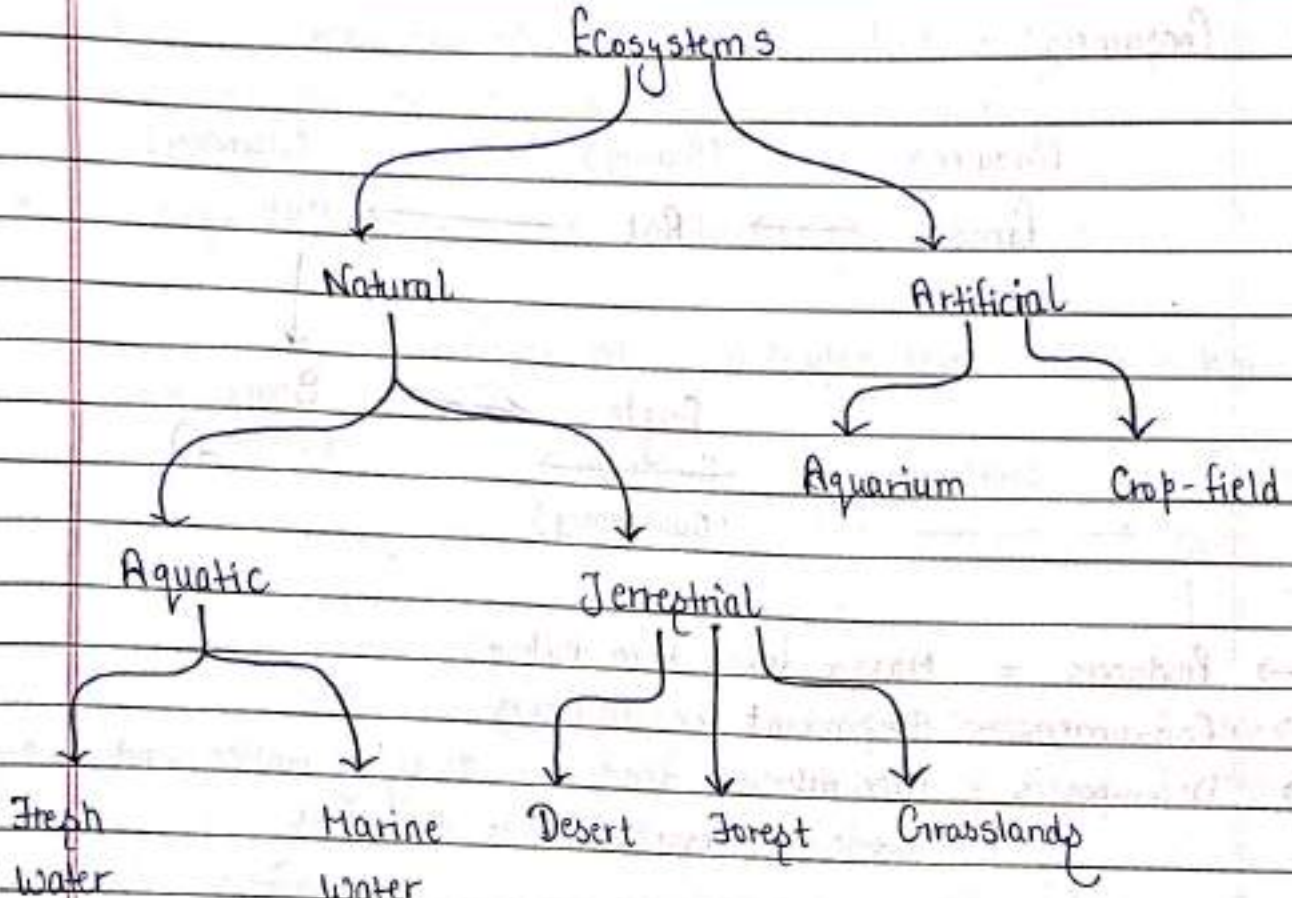
→ Ecosystem

Community where Biotic and abiotic components interact with each other.

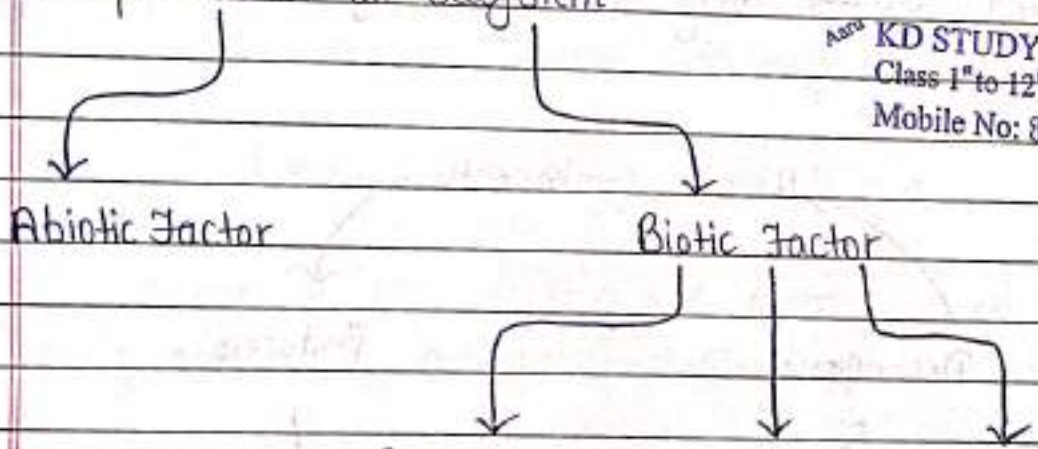
The ecosystem remains the same no matter where the organism travels

Ecosystem depends upon all the essential life processes such as photosynthesis.

→ Types Of Ecosystem:-



- Components of an ecosystem



• Consumers :-

(Producer) (Primary) (secondary)

Grass → Rat → Cat

↓

Eagle ← Snake

(~~Quantiary~~) (Tertiary)

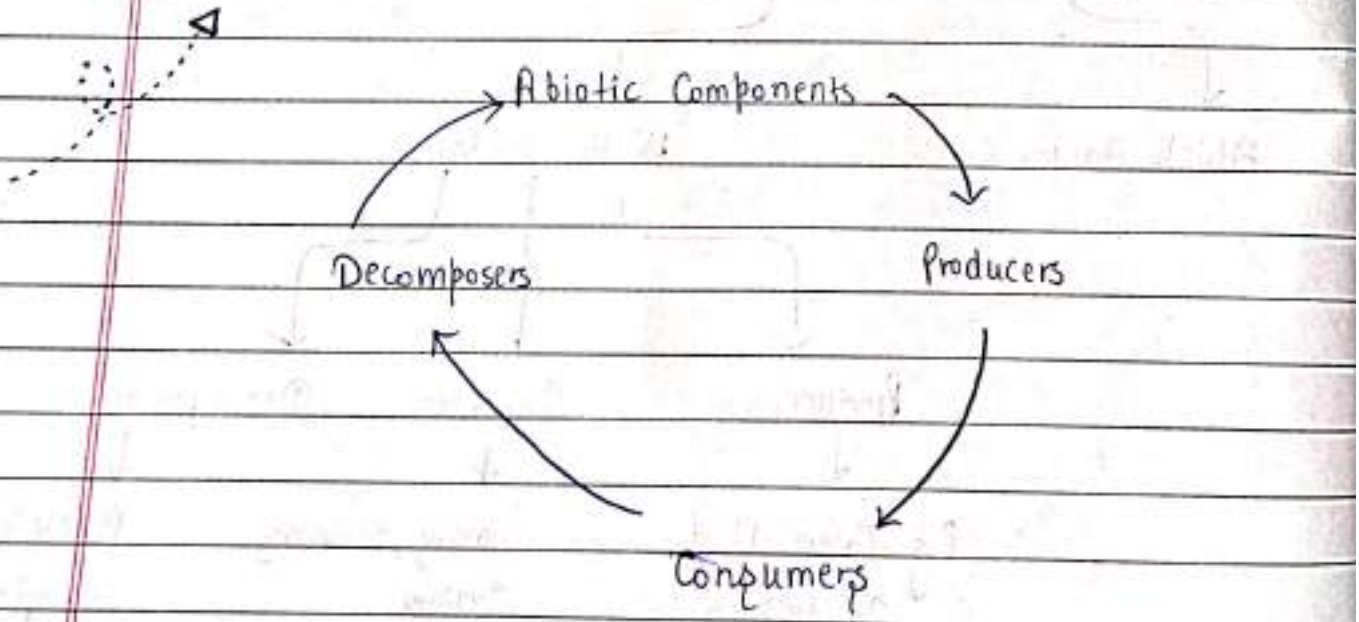
(Quaternary)

→ Producers = Makes food from nature.

→ Consumers = Dependent on Producers.

→ Decomposers = Decomposes dead and decaying matter and the nutrients absorbed into the soil.

→ An ecosystem involves input of energy and matter which are exchanged between living and non-living components in a cyclic process.



→ Food Chain :-

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A food chain is the flow of ~~food~~ food energy from one organism to the next and to the next an so on.

- Energy Transfered ⟶ Unidirectionally
- Each organism stands at a particular level which is known as Trophic level

{1st trophic lvl.} {2nd trophic lvl.} {3rd trophic lvl.}
Grass ⟶ Rat ⟶ Cat
↓
Snake ⟵ Eagle
{4th trophic lvl.} {5th trophic lvl.}

- 1st ~~tropica~~ trophic level :- Producers or ~~te~~ autotrophs.
- 2nd trophic level :- Primary Consumers.
- 3rd trophic level :- Secondary Consumers.
- 4th trophic level :- Tertiary Consumers.

→ Loss of Energy in an ecosystem :- The 10% law

- An average of 10% of the food eaten is turned into its own body and made available for the next level of Consumers.
- Therefore, 10% can be taken as the average value for the amount of organic matter that is present at each step and reaches the next lvl. of Consumers.

Plant ⟶ Deer ⟶ Lion
(10 J) (0.1 J) (0.1 J)

- Rest of the 90% energy is used for the various life processes.

→ Food Web :-

- A group of several interconnected food chains, where an organism gets food from more than one group of organisms.

→ Food Chain V/s Food Web

	Food Chain	Food Web
i)	A food chain is a linear flow of energy and nutrients from one organism to another.	A Food Web can be termed as the Combination of many different food chains and relationship btw organisms.
ii)	An organism of higher level trophic feeds on a specific organism of lower trophic level.	An organism of a higher trophic lvl. has access to more members of a lower trophic lvl.
iii)	Does not effect ~~adaptivity~~ adaptability and competitiveness of organisms.	It has a role in improving the adaptability and competitiveness of an organisms.

→ Biomagnification :-

The Process by which a compound (Pollutants or pesticides) increases concentration as trophic level increases of the Food Chain

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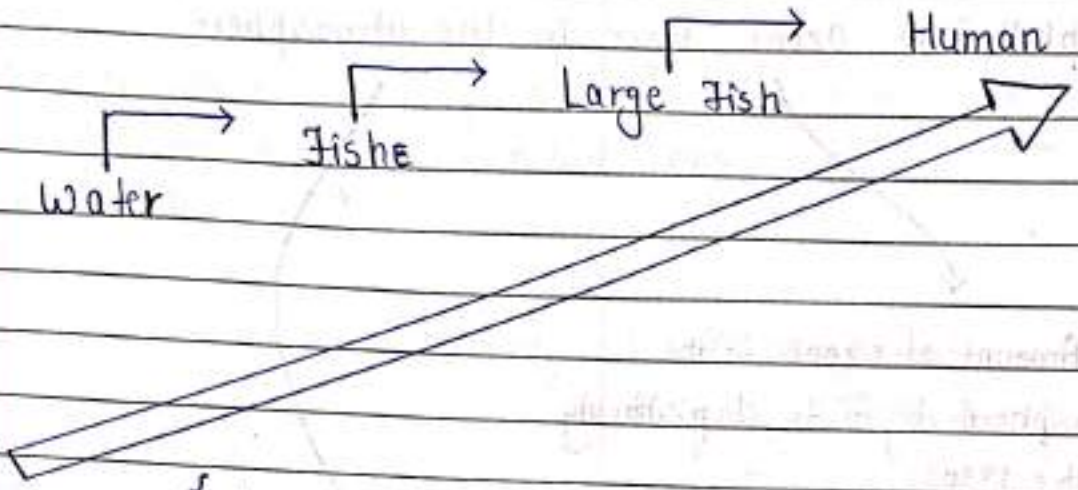
Biomagnification



{ Mercury Concentration }

→ Ozone Layer :- → O_3

In higher levels of atmospher it performs essential function.

It is present in the ~~troposphere~~ stratosphere, as a deadly poison.

Work as a shield and protect us from UV radiation.

UV (Ultraviolent) rays comes from sun and cause skin Cancer.

- Formation of Ozone :-

$$O_2 \xrightarrow{UV} O + O$$

UV radition breaks O_2 molecules into single atoms of oxygen.

$O + O_2 \longrightarrow O_3$
(ozone)

- Depletion of Ozone layer in the atmosphere

Amount of ozone in the atmosphere began to drop sharply in the 1980s.

The Reason behind the depletion of ozone is the CFCs (Chlorofluorocarbons) released by the refrigerators, fire extinguishers and AC used by humans.

→ Disposal of Waste :-

The disposal of Waste should be done in a scientific way

The method to be used depends on the nature of the waste.

Waste

Biodegradable

Non-Biodegradable

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- **Biodegradable v/s Non-Biodegradable**

	Biodegradable	Non-Biodegradable
i.)	It decomposes naturally in the environment by the action of microbes.	ii) It doesn't decomposes naturally.
ii.)	It is envimnmental friendly.	ii.) It is harmful for environment & causes pollution.
iii.)	Made up of natural ingredients.	iii.) Made up of synthetic materials.
iv.)	It can be converted into Manure and recycled.	iv.) It can be either reused or recycled.
v.)	E.g.- Paper, wood etc.	v.) E.g.- Plastic Bags, Cans etc.

- **Recycling**

Process of converting waste materials into new materials & objects.

Reduces the amount of non-biodegradable wastes.

- **Landfills**

Dumps the waste of whole area in larger lands or areas.

- Composting
  - Biodegradable wastes are mixed with soil and provide it nutrients and makes the soil fertile
- Incineration
  - Burning of substance at high temperature to form ash.
  - Commonly used for disposal hospital waste.
- Sewage Treatment
  - Sewage treatment carried out by Sewage treatment plants (STPs), where sewage is filtered.
- Biogas Production → Waste → Biogas by help of bacteria, ~~and~~ fungi or other microbes.
  - Used as a fuel
  - Biodegradable waste, such as food items, animal waste or organic industrial waste from food packaging industries are sent to biodegradation plants.