

(ii) Abiotic Components :- The non-living components (physical and chemical) of ecosystem collectively form a community which is known as abiotic components or abiotic community. For Example; Climate, soil, water, air, energy, nutrients etc.

(a) Physical components :-

They include the energy, climate, raw materials and living space that the biological community needs all the time.

→ Physical components are useful for the growth and maintenance of its member. For Examples; - Air, water, soil, sunlight etc.

(b) Chemical Components :-

→ Chemical components are the sources of essential nutrients.

→ For Examples :-

→ Organic substances like Protein, lipids, carbohydrates etc.

→ In-Organic substances like all micro elements (Al, Cobalt, Copper, zinc) and macro elements (Carbon (C), Hydrogen (H), Oxygen (O)

Nitrogen (N), Potassium (K), Phosphorus (P) and

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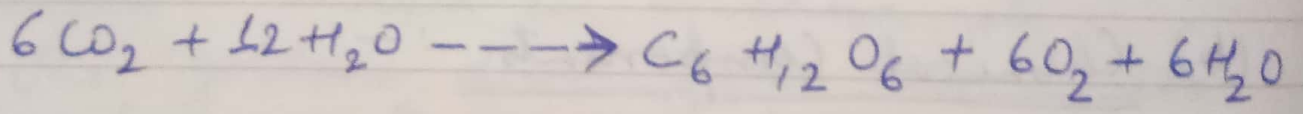
few other elements.

* Biotic components classified into 3 types

(a) Producers (Plants) :-
(Autotrophs)

→ Producers synthesize their food themselves through photosynthesis.
For Example; All green plants, trees.

→ Photosynthesis :- The green pigments called chlorophyll, present in the leaves of plants, converts CO₂ and H₂O in the presence of sunlight into carbohydrates.



This process is called photosynthesis.

(b) Consumers (Heterotrophs) :- →

→ Consumers - Animals

For Examples :- Plant eating species
Insects, rabbit, goat, deer, cow etc.

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→ Classification of consumers :-

(i) Primary Consumers (Herbivores) (Plant eaters)

→ Primary consumers are also called herbivores,

→ They directly depend on the plants for their food. Therefore they are called plant eaters.

For Examples :- Insects, rat, goat, deer, cow, horse, etc.

(ii) Secondary Consumers (Primary Carnivores) (Meat eater) :-

→ Secondary consumers are primary carnivores.

→ They directly depend on the primary consumers or herbivores for their food.

→ They feed on primary consumers.
For Examples :- Frog, cat, snakes, foxes, etc.

(iii) Tertiary Consumers (Secondary Carnivores) (Meat-eaters)

→ They are secondary carnivores.

→ They depend on the primary carnivores for their food and they feed on secondary consumers.

For Examples ; Tigers, Lions etc.

Often attitudes are kindled in the flame of others' convictions.

- Louis E. Le Bar

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(10) Decomposers :-

- Microorganisms like bacteria and fungi are the main examples of the decomposers.
- Decomposers attack on the dead bodies of producers and consumers.
- They decompose them into simpler compounds.
- During the decomposition inorganic nutrients were released.

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MARCH '17

TUESDAY

DAY 066-299 Wk 10

07

B.A. Part - III

Paper - V &

Date - 30/06/2021

Paper - VII

Geographical Thoughts & Three Southern Continent
(Unit - III)

&

Environmental Geography (Optional Paper)
(Unit - II)

* Ecosystem (Continued)

Functions of an Ecosystem

→ The most important function of an ecosystem is to allow flow of energy and cycling of nutrients between biotic & abiotic components.

→ It maintains a balance among the various trophic levels.

→ It regulates the essential ecological processes, supports life systems and maintain the stability.

→ Ecosystem cycles the minerals through the whole biosphere.

→ The abiotic components help in

Our attitude toward life determines life's attitude towards us.

- Earl Nightingale

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WEDNESDAY

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the synthesis of organic components that involves the flow of energy.

* Types of Functions of an Ecosystem :-

→ Functions of an ecosystem are divided into three types :-

1.) Primary Function

2.) Secondary Function and

3.) Tertiary Function.

1.) Primary Function :- →

The primary function of ecosystem is manufacture of starch (Photosynthesis)

2.) Secondary Function :- →

The secondary function of all ecosystem is distribution of energy flow in the form of food to all consumers.

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3.7 Tertiary Function

→ All living things died at a particular stage or time. These dead systems are decomposed to initiate third function of ecosystems namely "cycling".

→ The functioning of an ecosystems may be understood by studying their following terms: ↓—

(i) Energy and Material flow

(ii) Food Chains

(iii) Food Webs

(iv) Food Pyramids

(i) Energy and Material flow in the Ecosystem : —

→ As we know that Energy is the most essential requirement for all living organisms.

→ Sun is the only source of energy to our planet Earth.

→ Solar energy is transformed to chemical

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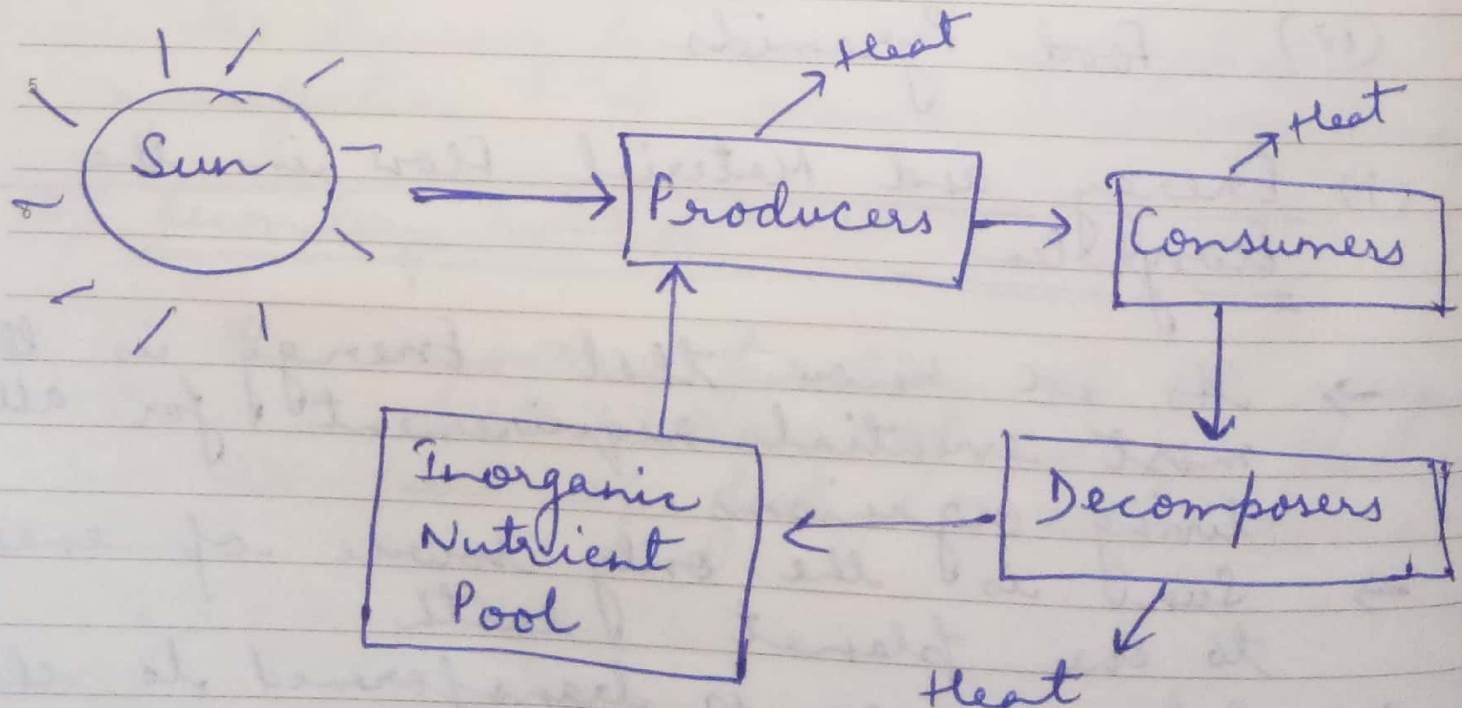
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energy with the help of photosynthesis by the plants or primary producers.

→ As we know that through a lot of sunlight falls on the green plants but only 1% of it is utilized for photosynthesis.

→ It is the most essential step to provide energy for all other living organism in the ecosystem.

→ Thus the energy enters the ecosystem through the photosynthesis and passes through the different trophic levels.



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(ii) Food Chains :-

When the ^{living} organisms die, they are all decomposed by micro-organisms (like bacteria and fungi) into nutrients that can again be used by the plants.

⇒ At each and every transfer, approximately 80-90% of the potential energy gets lost as heat.

⇒ As we know that food chain always starts with plant life and ends with animal.

⇒ "Transfer of food energy from the plants through a series of organisms is known as food chain."

⇒ Herbivores : → Animals that eat only plants are known as Herbivores, like - Deer, Cow etc

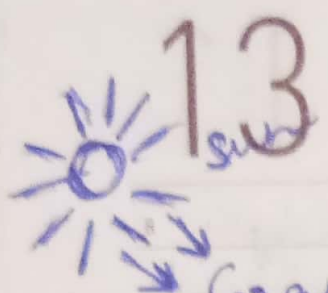
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Carnivores : → Animals that eat other animals are known as Carnivores. Like - Tiger, Lion etc.

Omnivores : → Omnivores are those who eat plants as well as animals both. Like humans, Cow etc.

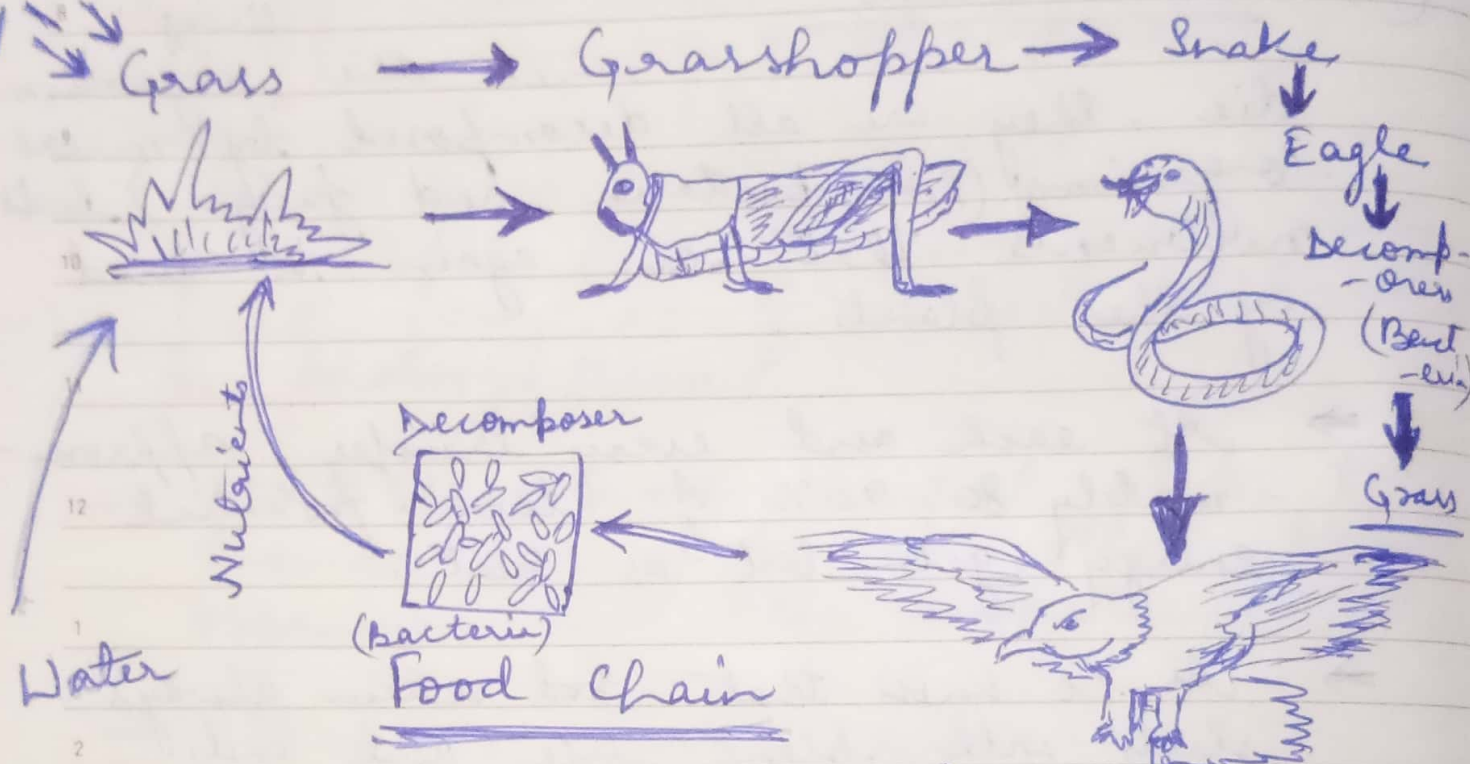
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MONDAY

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Trophic Levels ($T_1; T_2; T_3; T_4; T_5$) Eagle

- 1) Grass — T_1
- 2) Grasshopper → T_2
- 3) Snake → T_3
- 4) Eagle — T_4
- 5) Decomposer — T_5

* The various steps through which food energy passes in an ecosystem is called as Trophic Levels.