

TERRESTRIAL ECOSYSTEM

ECONTENT FOR M.A SEMESTER II STUDENTS

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Terrestrial ecosystem is a dominant ecosystem of landforms. Major terrestrial ecosystem are in specific biome and are found and found in tundra, taiga, temperate deciduous forest, tropical rainforest , grassland and desert. Terrestrial ecosystem is different from aquatic ecosystem with lower water availability It comprises a community of organism and their environment that occurs on the landmasses of continents and islands. There are variations in composition and geographical variation in terrestrial communities. Terrestrial ecosystem occupy $(144,150,000 \text{ km})^2$. or 28% of earth's surface. First terrestrial ecosystem appeared some 425 m years ago. Terrestrial ecosystem have been major site of adaptive radiation of both plants and animals .

Various biotic and abiotic elements on land can be looked upon as different ecosystems based on difference in climate, natural vegetation and animal life.

(i) Grassland Ecosystem

Grassland ecosystem comprises Savana Grassland and Temperate Grassland. Grassland occupy roughly 19% of the earth's surface. Grasslands occur in interior parts of the continents. As there is no leaching, soil is fertile. Various components of grassland ecosystem areas under.

Biotic Components

Biotic components consists of producer, consumer, and decomposers.

Producer – They are mainly grasses of different species. Besides them few shrubs also contribute to primary production.

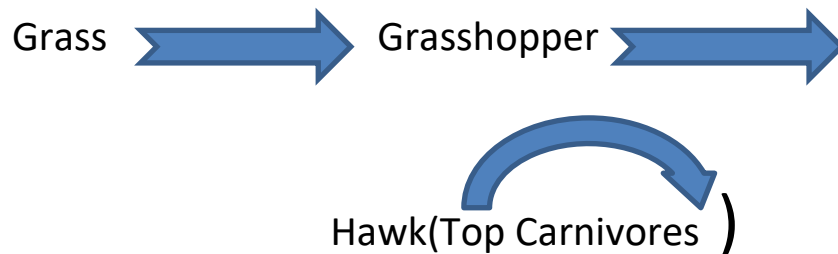
Cosumers – Cows, buffaloes, deers, sheep, rabbit, insects etc.

Secondary Consumers - Carnivores like fox, jackal, snake, frog, bird etc.

Tertiary Consumer – Hawks (feeding on snakes)

Decomposers – the microbes like fungi, bacteria and actinomyces.

Abiotic Components – Nutrients are present in soil and air. Thus elements like C, H, O, N, P, S etc are supplied by CO_2 , H_2O , nitrates, phosphates etc.



(FOODCHAIN IN GRASSLAND ECOSYSTEM)

(ii) Forest Ecosystem-

Forest occupy nearly 10% of the land area of earth. They are of great importance for maintaining the ecological balances. The various components of grassland ecosystems include the following:-

Biotic Components

Producers-

Trees that vary from one type of forest to another. In some forests there are also shrubs and ground vegetation.

Consumers-

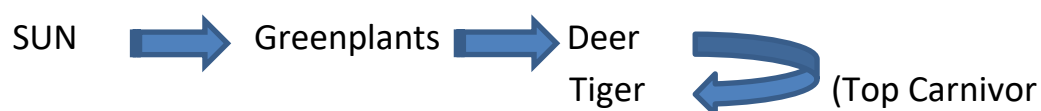
Primary Consumer- Herbivores like ants, flies, leaf hoppers, bugs, spiders etc. Larger herbivores like elephants, deer, Nilgai etc.

Secondary Consumers – Snakes, birds, lizards

Tertiary Consumer – Lion, tigers etc.

Decomposers – Fungi, bacteria, actinomyces. They are more aggressive in tropical forests.

Abiotic Components – Organic and inorganic substance present in the soil and atmosphere, minerals, dead organic debris etc.



FOOD CHAIN IN FOREST ECOSYSTEM

(iii) Desert Ecosystem

This includes the hot and cold deserts of the world and the cold lifeless Tundras. Deserts occupy 17% of land in regions of annual rainless areas where the rain is less than 25 cms. The animal life is highly modified to adapt to extreme conditions of desert .

Biotic Components

Producers _ Shrubs, bushes, grasses, and stunted trees ,mosses and lichens in Tundra.

Consumers – Reptiles and insects, Nocturnal rodents, insects ,camels

Decomposers – Very limited thermophilic fungi and bacteria .

Abiotic Components Present in soil, atmosphere,minerals etc .

(iv) Alpine Ecosystem –

Along the slopes of high mountain ranges like Himalayas ,Andes, Rockies . In these mountain ranges gradual change in Biomass follows altitude rather than latitude . .For eg in the tropical mountains the sequence of communities and conditions from the base of the mountain to the snowline are tropical forests, deciduous forests, coniferous forests and Tundra .

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