



Ecosystems

Unit 2

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Types of Ecosystems

The ecosystem can be generally classified into two types:

- 1. Natural Ecosystem
- 2. Artificial Eco system

Natural Ecosystem:

The following are the two types of **natural ecosystem** based on their habitat.

- 1. Terrestrial Ecosystem
- 2. Aquatic Ecosystem
- **Man-made or Artificial Ecosystem:**
- An artificial ecosystem is created and maintained by man for his different needs. Examples: Reservoirs, Artificial lakes and gardens, etc.



Types of Ecosystems

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- 1) Terrestrial Ecosystem: This ecosystem is related to land.
Examples:
 - Grassland ecosystem.
 - Forest ecosystem, and
 - Desert ecosystem etc.



Types of Ecosystems

- 2) Aquatic Ecosystem:

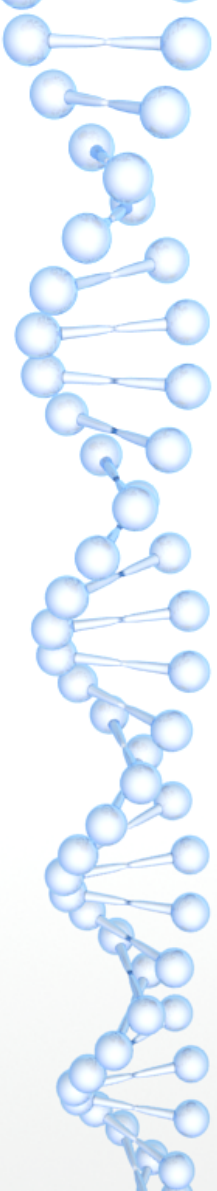
This ecosystem is related to water, it is further sub divided into two types based on salt content.

- Fresh Water Ecosystem:
 - a. Running Water Ecosystems- Examples: Rivers, streams (small narrow rivers)
 - b. Standing Water Ecosystems- Examples: Pond, lake & well, etc.
- Marine Ecosystem: Examples: seas and sea shores <land along the edges of sea>



Food Chain

- The process of transfer of food (energy) from one organism to a series of organisms is called as “food chain”.
- A food chain always starts with a plant life and end with animal life. Thus, a food chain is a picture (or) model that shows the flow of energy from autotrophs (producers) to series of organisms in an environment, as shown in the following figure.



Three basic types of food chains are found in a typical eco system. They are:

- Grazing food chains.
- Detritus food chains.
- Parasitic food chains.



Types of Food chain

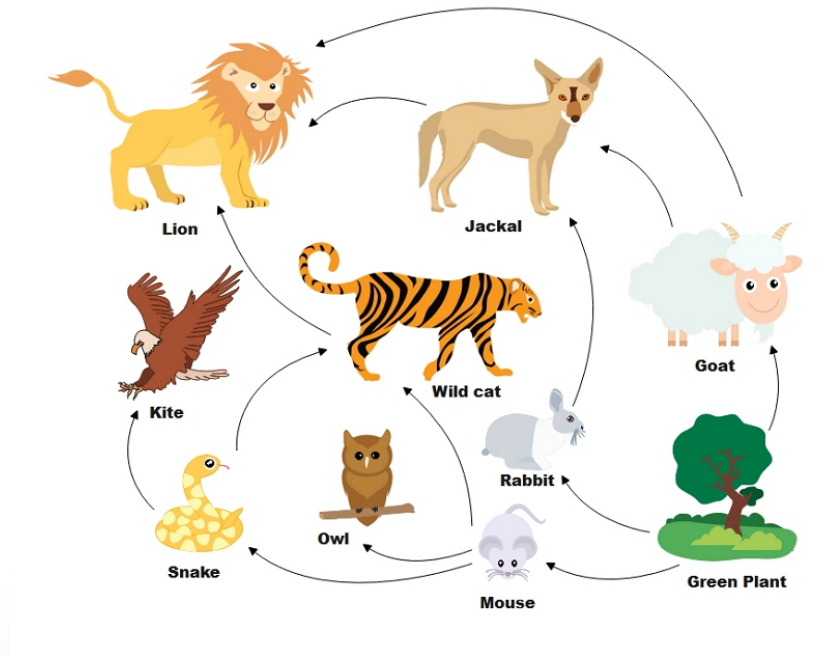
- Grazing food chain starts with green plants (producers) and goes to decomposer food chain (or) detritus food chain through herbivores and carnivores.
- Detritus food chain starts with dead organic matter (plants and animals) and goes to decomposer through consumers. Detritus food chains, independent of solar energy, but they depend on influx of dead organic matter. Example: Dead Plants Soil mites -Algae- Crabs- Small fish- Large fish
- Parasitic food chain operates in many ecosystems. In this food chain either consumer (or) producer is parasitized and the food passes to smaller organisms. A parasitic food chain involves host parasite hyper parasites' links. Example: Trees-Fruit eating birds-Lice & Bugs-Bacteria-Fungi



Food Web

- In a food web many food chains are inter connected, where different types of organisms are connected at different trophic levels, so that there are a number of options of eating and being eaten at each trophic level.

Food Web

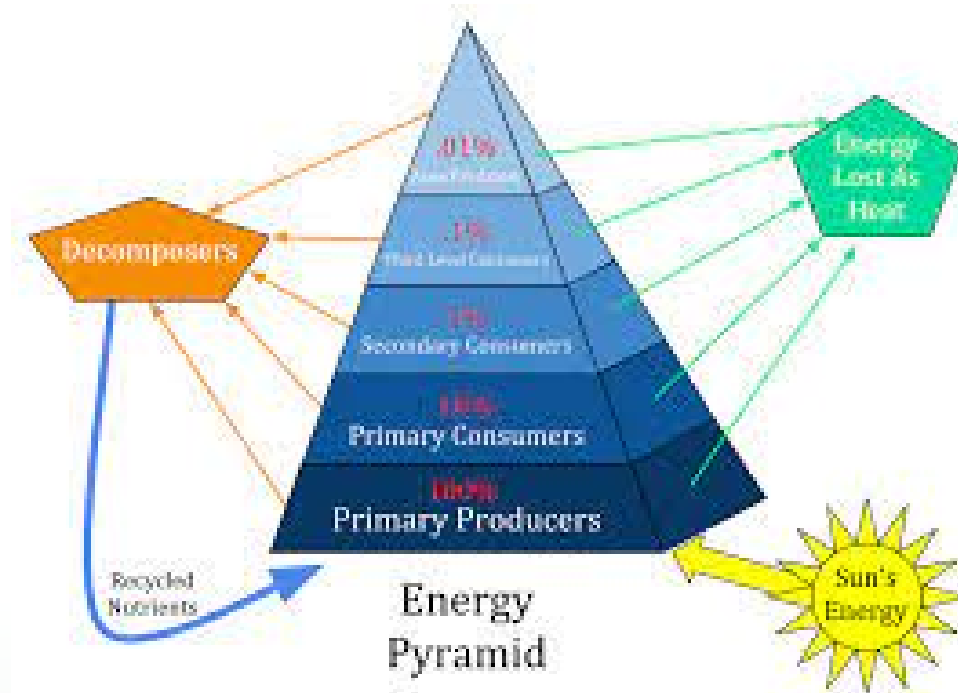




Ecological Pyramid

- The concept of ecological pyramids was first developed by British ecologist Charles Elton in 1927. Ecological pyramids are the diagrammatic representation of trophic structures in which the trophic levels (i.e., tiers) are depicted in successive stages.

Ecological Pyramid



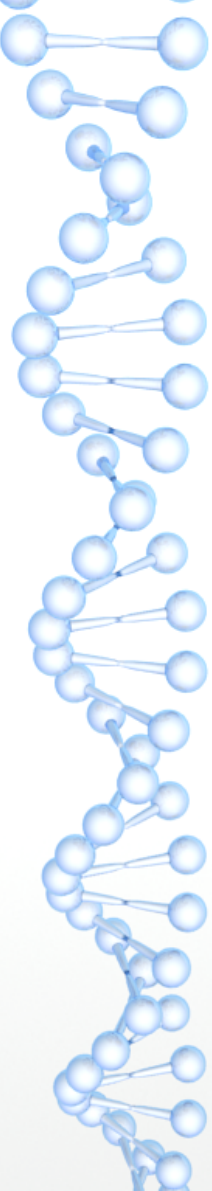


Biodiversity

- Biodiversity is the abbreviated word for —biological diversity (bio -life or living organisms, diversity-variety). Thus biodiversity is the total variety of life on our planet, the total number of races, varieties and species. The sum of total of various types of microbes, plants and animals (producers, consumers and decomposers) in a system.

Threats to Biodiversity:

- Habitat loss Deforestation activities (cutting trees for timber, removal of medicinal plants)
- Production of hybrid seeds requires wild plants as raw material, farmers prefer hybrid reeds, many plant species become extinct.
- Increase in the production of pharmaceutical companies made several number of medicinal plants and species on the verge of extinction.
- Removal of forest-cover for road laying and also due to soil erosion.
- Illegal trade of wild life.
- Population explosion, construction of dam, discharge of industrial effluents use of pesticides.



Conservation of Biodiversity

Measures to be taken to conserve biodiversity:

- Illegal hunting and trade of animals and animal products should be stopped immediately
- People-at-large should boycott purchasing coats, purse or bags made of animal skin
- Bio-diversity laws should be strengthened.
- Adequate crop and cattle compensation schemes must be started
- Solar powered fencing must be provided with electric current proof trenches to prevent animals from entering fields.
- Cropping pattern should be changed near the forest borders
- Adequate food and water should be made available for wild animals within forest zones.
- Development and construction work in and around forest region must be stopped.