

Components of ecosystem

An ecosystem consists of two main components: biotic components (living organisms like plants, animals, fungi, and microorganisms) and abiotic components (non-living factors such as sunlight, water, air, temperature, soil, and nutrients). These components interact with each other through processes like energy flow and nutrient cycling to sustain the ecosystem.

Biotic Components

Biotic components are the living things that have a direct or indirect influence on other organisms in an environment. For example plants, animals, and microorganisms and their waste materials.

Producers (Autotrophs):

Organisms that produce their own food, such as plants, through photosynthesis.

- These are organisms that manufacture their own food and thus for the entire ecosystem through the process of photosynthesis.
- They are also called Autotrophs (i.e. self-nourishment or self-feeding).
- Example: Photosynthetic plants.

Consumers (Heterotrophs):

Organisms that obtain energy by eating other organisms. This includes herbivores (plant-eaters), carnivores (meat-eaters), and omnivores (both plant and meat-eaters).

- These organisms are incapable of manufacturing their own food and hence rely on others.
- They depend on producers directly or indirectly for their food.
- Consumers obtain energy by ingesting other organisms or by absorbing food molecules.

Carnivores

- Consumers can again be grouped into three categories according to their food preferences:
- Also called as secondary consumers, these are organisms that eat herbivores.
- They don't eat plants.
- Sometimes carnivores are called predators, whereas organisms that carnivores hunt are called prey.
- Example: meat-eating animals like lions, tigers etc.

Omnivores

- These are the organisms that can eat plants as well as other animals.
- For example: bears, rats, foxes, certain insects and even humans are omnivores.

Decomposers (Saprotrophs):

Organisms, like fungi and bacteria, that break down dead organic matter and waste, returning nutrients to the ecosystem.

Detritivores

- These decomposers are debris eaters that obtain organic nutrients from detritus by internal digestion.
- These are usually multicellular animals such as vultures, earthworms, slugs, crabs, etc.
- They not only consume dead organic matter but also break it down into smaller pieces, making it more accessible for bacterial or fungal decomposers.