ECOSYSTEM: CONCEPT, DEFINITIONS, CHARACTERISTICS AND TYPES

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Ecosystem, the complex of living organisms, their physical environment, and all their interrelationships in a particular unit of space. The term “Ecosystem” was first coined by A.G.Tansley, an English botanist, in the year 1935.

https://www.earth.com/news/marine-ecosystems-survive-extinctions/

Ecosystem Scientific Definition

An ecosystem is **the basic unit** of the field of the scientific study of nature. According to this discipline, an ecosystem is a physically defined environment, made up of two inseparable components:

The biotope (abiotic): a particular physical environment with specific physical characteristics such as the climate, temperature, humidity, concentration of nutrients or pH.

The biocenosis (biotic): a set of living organisms such as animals, plants or micro-organisms, that are in constant interaction and are, therefore, in a situation of interdependence.

An ecosystem can be categorized into its abiotic constituents including minerals, climate, soil, water, sunlight, and all other nonliving elements, and its

biotic constituents, consisting of all its living members. Linking these constituents together are two major forces: the flow of energy through the ecosystem, and the cycling of nutrients within the ecosystem.

KEY POINTS

An ecosystem consists of a community of organisms together with their physical environment.

Ecosystems can be of different sizes and can be marine, aquatic, or terrestrial. Broad categories of terrestrial ecosystems are called biomes.

In ecosystems, both matter and energy are conserved. Energy flows through the system—usually from light to heat—while matter is recycled.

Ecosystems with higher biodiversity tend to be more stable with greater resistance and resilience in the face of disturbances, disruptive events.

Ecosystem Services:

Without ecosystem services, life on Earth as we know it wouldn't exist. There are four main categories of ecosystem services:

Provisioning services refer to the products secured by ecosystems.

• Water

• Food (including cattle and seafood)

• Pharmaceuticals, biochemicals, and industrial products

• Energy (sunlight, hydropower, biomass)

Regulating services are the ecosystem services that allow the regulation of ecosystem processes such as:

• Climate regulation (and carbon absorption and storage via the oceans, trees, soil)

• Waste decomposition (one of the most essential microbial process happening in soil)

• Crop pollination (performed by agents such as bees that contribute to the reproduction of flowering plants)

• Water and air purification and regulation

• Control of pests and diseases

Types of Ecosystem

Supporting and habitat services refer to the ability of ecosystems to give habitat for migratory species and to support the viability of gene-pools.

- Primary reproduction
- Nutrient and seed dispersal

Cultural services are the benefits ecosystem services bring to humans.

- Inspiration for cultural (entertainment) and spiritual purposes
- Recreational experiences such as outdoors activities or ecotourism
- Scientific discovery and exploration

Types of Ecosystem

Major Ecosystem

- An ecosystem can be as small as an oasis in a desert, or as big as an ocean, spanning thousands of miles. There are two types of ecosystem:
- Terrestrial Ecosystem
- Aquatic Ecosystem

Terrestrial Ecosystems

- Terrestrial ecosystems are exclusively land-based ecosystems. There are different types of terrestrial ecosystems distributed around various geological zones. They are as follows:
- Forest Ecosystems
- Grassland Ecosystems
- Tundra Ecosystems
- Desert Ecosystem

Aquatic Ecosystem

- **Aquatic ecosystems** are ecosystems present in a body of water. These can be further divided into two types, namely:
- Freshwater Ecosystem
- Marine Ecosystem


Look deep into nature, and then you will understand everything better.

Thank You

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