

Ecology

Ecology is the scientific study of the relationships and interactions between living organisms and their environment. It examines how organisms interact with one another and with non-living components of their surroundings, such as air, water, soil, sunlight and temperature.

Ecosystem

An **ecosystem** is a functional unit of nature in which living organisms (biotic components) interact with one another and with the non-living environment (abiotic components) such as air, water, soil, sunlight and temperature. The interaction between these components helps in the flow of energy and cycling of nutrients. Examples- Pond ecosystem, Forest ecosystem, Grassland ecosystem, Marine ecosystem etc.

Difference between Ecology and Ecosystem

Sl.No	Ecology	Ecosystem
1	Ecology is the scientific study of the relationships between living organisms and their environment.	An ecosystem is a functional unit where living organisms interact with one another and with their physical environment.
2	It is a branch of biological science.	It is a functional unit of nature.
3	It focuses on the relationships and interactions between organisms and their environment.	It focuses on the interaction of biotic and abiotic components as a system.
4	Ecology is a broader field of study.	An ecosystem is a specific ecological unit studied within ecology.
5	It studies organisms, populations, communities and their environment.	It consists of biotic and abiotic components.
6	Ecology studies how energy flows through different organisms and ecosystems.	Energy actually flows through the ecosystem mainly from the Sun to producers and then to consumers.
7	Ecology studies nutrient cycles such as the carbon and nitrogen cycles.	Nutrients are cycled within the ecosystem through interactions among organisms and the physical environment.
8	Helps in environmental conservation, biodiversity conservation, and environmental management.	Helps in the conservation and management of ecosystems such as forests, ponds, rivers and grasslands.
9	It can be studied at different levels, such as organism, population, community and environment.	An ecosystem itself is a level of ecological organization.

Ecology → *The study of the relationship between living organisms and their environment.*

Ecosystem → *A functional natural unit formed by the interaction of living and non-living components.* **Example-**

Studying the relationship between fish, plants, and water in a pond is ecology. On the other hand, the complete system formed by fish, plants, microorganisms, water, soil, sunlight and other components is called a pond ecosystem.