

Ecosystems

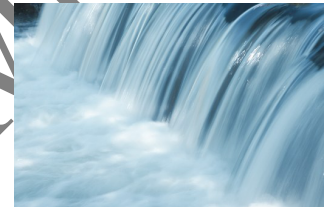
What is an ecosystem?

An *ecosystem*¹ is a community in which living organisms and the nonliving parts of the environment interact with one another. Ecosystems come in all shapes and sizes and are all unique.

What are the parts of an ecosystem?

In every ecosystem, there are two main components:

- **Abiotic factors:** The nonliving portion of the environment. These can be both physical or chemical. Examples of abiotic factors include sunlight, water, air, and soil.
- **Biotic factors:** The living (or once living) portion of the environment. They must be able to reproduce. Examples of biotic factors include fungi, plants, and animals.



Water is an abiotic factor.

Different types of ecosystems:



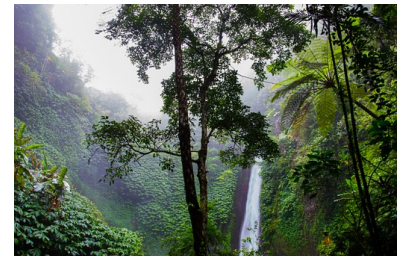
This coral reef is a marine ecosystem.

Ecosystems are located throughout the world. In each different location, they contain different organisms. Some examples of ecosystems are: forests, deserts, jungles, grasslands, mountains, marine, and aquatic communities.

Some ecosystems are large and consist of many different organisms. A

rainforest is just one example of a large ecosystem. Because rainforests are very big, they provide a home for many animals – such as monkeys, sloths, and snakes – as well as for many plants – such as trees, orchids, and epiphytes. Biotic and abiotic factors interact with

each other in myriad ways. For example, trees can provide shelter to



A rainforest is an example of a large ecosystem.

¹ *Ecosystem*: A community where living organisms and the nonliving parts of the environment interact with each other

animals while using sunlight and water for their own survival.

How do different parts of the ecosystem interact with each other?

Reading Sample



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ecosystem where that organism lives, composed of the biotic and abiotic factors that the organism needs to survive. The **niche** of an organism is its role in the ecosystem. Often, an organism's niche determines its habitat. For example, giraffes live on the savannah and they eat the leaves of tall trees. Thus, their habitat is the savannah and their niche is eating leaves high up in the trees that other animals can't reach. In some cases, they even help germinate the trees they eat by distributing seeds in their droppings.



Lions and tigers occupy the same niche, but live in different ecosystems.

Two species can either have the same niche or live in the same habitat, but they cannot live in the same habitat AND have the same niche. For example, both tigers and lions have a similar niche: that of apex predator. However, they live in different habitats; tigers are found in forests whereas lions are found in

open grassland. Another example is ducks and plovers. Although they both live along the coast of Florida, they occupy different niches. Ducks eat mainly underwater plants whereas plovers eat small insects on the shore.

Additional Facts About Ecosystems:

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- **Predation:** One species eats another.
- **Competition:** Two or more different organisms compete for the same resource.
- **Symbiosis:** Two different species have a close relationship.
- **Commensalism:** A type of symbiosis in which one species benefits from another without harming it.
- **Mutualism:** A type of symbiosis in which both species benefit.
- **Parasitism:** A type of symbiosis in which one species benefits at the expense of the other.
- While ecosystems have a very simple definition, they are both unique and complex, made up of many interacting components.

Reading Comprehension Questions:

1. What is an ecosystem?
2. What are the two components of an ecosystem? What are some examples?
3. Name
4. What
5. What is the
6. What are
7. What's the difference between a habitat and a niche? Give an example.
8. What are

Extension Questions:

9. Explain how an animal could occupy different trophic levels. Give an example.
10. What traits

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References

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