

What is an ecosystem? (click the link to listen)

An ecosystem is made up of animals, plants and bacteria as well as the physical and chemical environment they live in. The living parts of an ecosystem are called biotic factors while the environmental factors that they interact with are called abiotic factors. Because living things both respond to and are influenced by their environment, it is important to study both factors together to get a full picture.



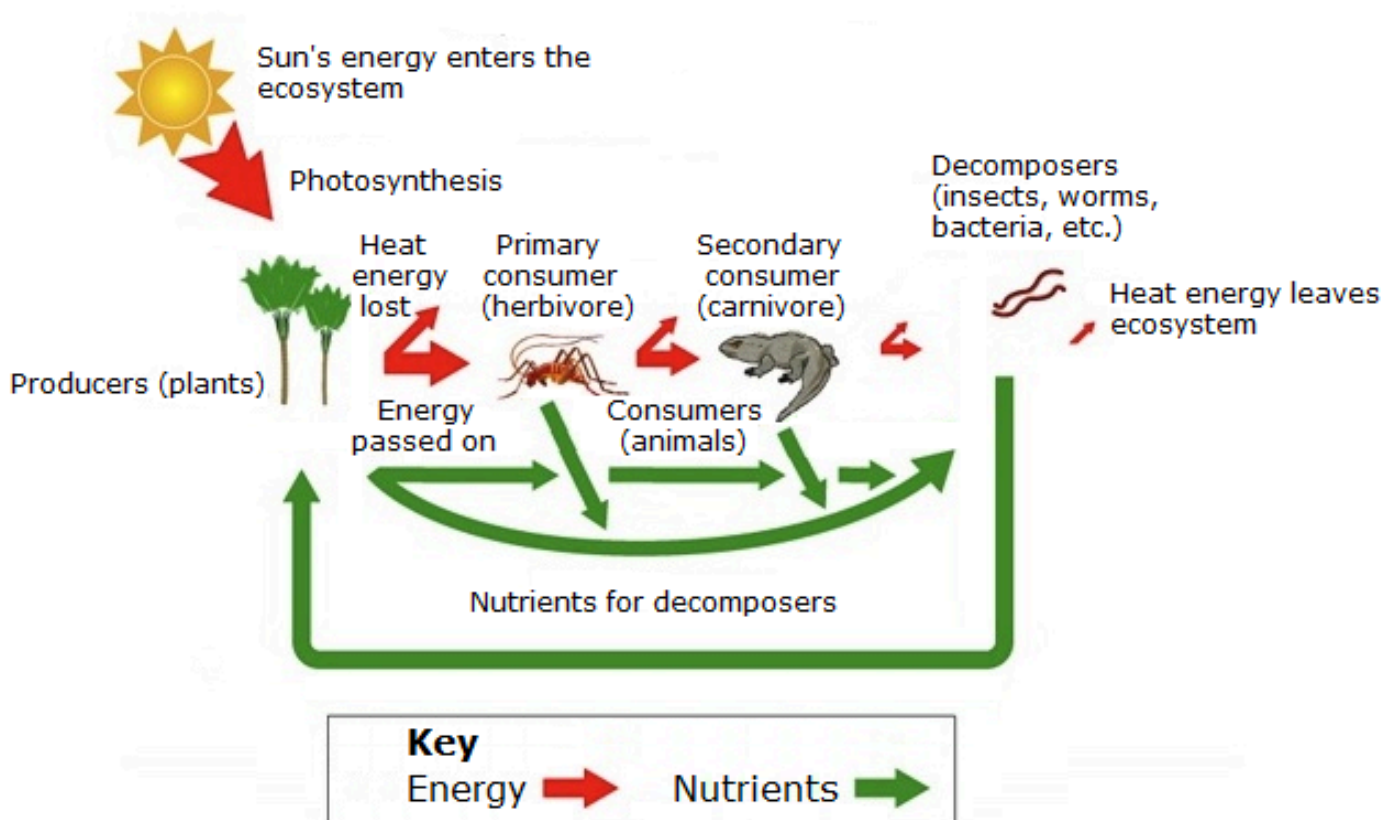
Seals are consumers

An ecosystem must contain producers, consumers, decomposers, and dead and inorganic matter. Seals are an example of consumers. They are unable to make their own food and so must eat other animals. Pictured is a Weddell seal (*Leptonychotes weddellii*).

Because we are talking about interactions, ecosystems can be any size. A puddle on the ground can be as much of an ecosystem as a whole lake, forest or desert.

What makes up an ecosystem?

A simple ecosystem



An ecosystem must contain producers, consumers, decomposers, and dead and inorganic matter. All ecosystems require energy from an external source – this is usually the sun. Plants need sunlight to photosynthesise and produce glucose, providing an energy source for other organisms. The living organisms in an ecosystem can be described as producers, consumers and decomposers. Producers are the green plants, which make their own food through photosynthesis. Consumers are animals who get their energy by eating other organisms: herbivores eat plants, carnivores eat herbivores or other carnivores, and omnivores eat both plants and animals. Decomposers (including bacteria, fungi, and some plants and animals) break down dead plants and animals into organic materials that go back into the soil.

- Producers make food from inorganic matter. (Plants are producers – they make sugar through photosynthesis – they use sunlight, water and carbon dioxide to produce food.)
- Consumers eat producers – they are unable to make their own food and so must eat other plants and animals. (All animals are consumers.)
- Decomposers break down dead matter – these may be bacteria or animals that feed off dead plants and animals.
- Inorganic matter is what non-living things are made from. These are things like air, water, rocks, soil and metals. Inorganic matter is important in an ecosystem because it is what producers use, and it is the physical and chemical, non-living environment that we live in.

Why is knowing about ecosystems important?

The interactions going on are all linked, and they can get very complex. Anything that impacts on one aspect of the ecosystem will, in turn, impact on others. Unfortunately, humans often do things that result in disrupting an ecosystem, and even though their actions may seem small, they can have large effects. For example, the over-fishing of sharks can have catastrophic effects for reef ecosystems. By removing the top level predator, the food it normally eats thrives and then over-populates. This disrupts the whole reef ecosystem, and if balance is not restored, the ecosystem can collapse. This means it is important for humans to consider the consequences of their actions and do their best to change their behaviours when problems are identified.