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## Abiotic/Biotic Environment

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The environment or surroundings in which every organism, or living thing, exists can be divided into two categories: its abiotic and its biotic environment. Abiotic refers to the nonliving part of the environment, while biotic refers to its living part.

Typical examples of abiotic factors that make up an organism's environment are sun, wind, rain, soil, and water. Examples of biotic factors are any of the organisms, such as bacteria, plants, and animals that live in the environment. Abiotic forces or factors affect and influence life in an environment. Dramatic examples of abiotic factors are acid rain or a severe storm, while more ordinary examples are water temperature or the amount of oxygen dissolved in a stream. Plants are affected by abiotic factors such as quantity of minerals in the soil, the amount of sunlight received by the plant, and the effects of wind, water, and overall temperature of climate. Animals are usually less affected by abiotic factors, although temperature and the availability of water can impact an animal's ability to survive.

While an abiotic environment consists of nonliving things, biotic factors include all of the living things, plant and animal, that might be found in any given environment. While green plants get much of the energy they need from the abiotic factors in their environment (sunlight, water, minerals), most other living things (like animals) depend more on biotic elements (since these animals must eat plants and/or other living things to survive).

The organisms that make up the biotic part of an environment can interact in several different ways. Organisms with a neutral interaction have little or no contact with or impact on each other. Organisms may compete for the same resource. They can have a predatory relationship (in which one species benefits by killing another); they can have a parasitic relationship (in which one benefits by living off another); or they can have a mutually beneficial relationship that is favorable to both. Similarly, abiotic factors can influence and shape one another, just as the wind shapes a dune or sunlight heats a pond.

Any environment that contains and supports living organisms is necessarily complex, with living and nonliving elements influencing and modifying each other. Virtually no major environment, or ecosystem, is completely biotic or abiotic, and nearly every living and nonliving element in an environment is related in some way to another. For example, animals and plants (biotic elements) can be affected by climate or weather (abiotic elements); and major changes in the abiotic environment (such as increased rainfall and flooding or a severe and prolonged drought) can alter the conditions and threaten the existence of certain organisms. A drought (abiotic factor) can eliminate many types of green plants, resulting in a decrease in animal population (due to scarcity of food, cover, and shelter). Conversely, too many animals in one area (biotic factor) can destroy important plant life; causing depletion of plant life, erosion, and the possibility of a changed local environment that will not support any life.

In a properly balanced environment, abiotic and biotic factors work together and make up a healthy, functional system. In a typical environment like a small pond, algae, plants, and animals make up the biotic forces, while the pond's water, minerals, and soil (as well as the amount of light it receives) make up some of the more obvious abiotic factors. Altogether, these interacting parts of an environment that are living and nonliving make up what is called an ecological system or ecosystem.

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