

Biotic Environment Encyclopedia Article

Biotic Environment

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Biotic Environment

The biotic environment of an organism refers to the living part of its environment, to the other organisms that help set the conditions for reproduction, and for growth and survival. The most obvious dependence of organisms on the biotic component of their environment is nutrient intake, nutrients that provide the energy needed for life processes. Green plants take their life-energy directly from the abiotic environment, but most other forms of life on earth must ingest other organisms to obtain nutrients and energy. Ecosystems are often described in terms of their abiotic (non-living) and biotic (living) components.

Organisms as part of the environment of other organisms are often characterized in ecology by a typology of relational impacts. Typical is the following set of categories offered by Eugene Odum: neutral (where neither population affects the other); competition (both direct inhibition of one species by the other and indirect inhibition when a common resource is in short supply); amensalism (in which one population is inhibited, the other not affected); predation (in which one species preys on another by killing it); parasitism (in which one species takes its nutrients from the bodies of a host species, which are not usually killed outright—though they may die eventually); commensalism (in which one population benefits and the other is not affected); protocoeperation (in which both benefit but the relationship is not obligatory) and mutualism (in which interaction is favorable to both and obligatory).

Another way of thinking about the biotic environment is that it is comprised of the totality of the organisms in a particular area, ranging in scale from a small biotic community to the total biomass on the face of the earth, a mass of living things often called the biosphere.