



## An Ecological Interaction in Marine Biology

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### Description

All the non-living elements that make up an ecosystem are collectively referred to as abiotic. The abiotic factors are made up of the sun, water, and terrain. Around 75% of the surface of the Earth is covered by the ocean. There are numerous elements in this segment that fall under the biotic and abiotic categories. Abiotic components are the physical and chemical components of marine bodies, whereas biotic components are the biological substances that are part of the marine ecosystem. Diverse marine biological communities that exist in distinct marine water zones have biotic chemicals that can survive. The interactions in marine biology are influenced by a number of variables, including pH, salinity, temperature, density, wave currents, hydrodynamic conditions, turbulence, and light penetration.

Astronomy, biological oceanography, cellular biology, chemistry, ecology, geology, meteorology, molecular biology, physical oceanography, and zoology are just a few of the many fields that make up the study of marine biology. The new field of marine conservation biology also draws on a number of more established fields, including marine ecology, biogeography, zoology, botany, genetics, fisheries biology, anthropology, economics, and law. The terms "abiotic factors" and "non-living factors" are used to describe all chemical and physical elements that are present in the lithosphere, hydrosphere, and atmosphere. Abiotic variables include things like sunlight, air, precipitation, minerals, and soil, to name a few. These elements significantly affect the persistence and procreation of species within an ecosystem. For instance, autotrophic organisms might not be able to

exist without enough sunlight. When these creatures inevitably perish, there won't be enough food for major consumers. Every organism in the food chain is impacted by this effect, which cascades up. The ecosystem becomes unbalanced as a result. Non-living elements that have an impact on an ecosystem are known as abiotic factors, sometimes known as abiotic components. Despite not being living, abiotic influences can have an impact on the ecosystem's related living things. Abiotic is derived from the root words which means "without," and "bio," which means "life." "Biotic factors" refer to an ecosystem's living components.

Much of the difference across different ecosystems is caused by abiotic forces. Abiotic variables affect whether creatures can survive in a specific location by determining the availability of vital resources, including sunshine, water, oxygen, and minerals. The ocean is home to a variety of unusual abiotic elements. Notably, salt is present in the ocean. It also includes the quality of depth, which has an impact on how much sunshine marine life receives. The species that inhabit the ocean depend on its salinity. To keep the salt of the ocean from messing with their biochemistry, all animals must adapt. Because saltwater would dry them, dolphins that swim in the ocean must obtain all of their water from the animals that they prey upon. Some fish have evolved to the point that they can only thrive in saltwater. The ocean has a lot of distinct zones with varying quantities of sunshine and hosts a wide variety of species, just like the rainforest. This is due to the fact that water itself both reflects and absorbs sunlight. The epipelagic zone, which is the top layer of the ocean, receives a lot of sunshine. Coral and seaweed are examples of photosynthetic marine life that can be found here.

In contrast, there is essentially no sunlight in the abyssopelagic zone at the bottom of the ocean. Strange marine life can be found in this region of the ocean, some of which cannot survive at the surface due to the dependence of their body structures on the high water pressure at depth. In contrast, there is essentially no sunlight in the abyssopelagic zone at the bottom of the ocean. Strange marine life can be found in this region of the ocean, some of which cannot survive at the surface due to the dependence of their body structures on the high water pressure at depth. The "hadopelagic" is a cooler, darker region found in the very deep ocean trenches. The name of this area is taken from the Greek underworld. There are several ocean ecosystems, including coastal ecosystems, coral reef ecosystems, and deep ocean ecosystems, as a result of these abiotic influences.

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