

Marine Biology and its Habitats

Sandre Seria*

Department of Biological Sciences, University of Cape Town, Cape Town, South Africa

ABOUT THE STUDY

The scientific study of the biology of marine animals, or life in the sea, is known as marine biology. Marine biology classifies species based on the environment rather than taxonomy because many phyla, families, and genera in biology have some species that live in the water and others that live on land.

Marine habitats

Coastal and open ocean habitats are two categories of marine environments. The region that stretches from the beach to the edge of the continental shelf is where you can find coastal ecosystems. Despite just making about 7% of the overall ocean area, the majority of marine species is located in coastal areas. Beyond the edge of the continental shelf, in the deep ocean, are open ocean ecosystems. Alternately, pelagic and demersal habitats can be used to categorise marine habitats. Demersal habitats are found close to or on the ocean floor, away from the surface and subject to ocean currents, whereas pelagic habitats are found near the surface or in the open water column. The occupants of marine ecosystems can alter it. Corals, kelp, and sea grasses are examples of marine creatures that are ecosystem engineers, reshaping the marine environment to the point that they add to the available habitat for other organisms.

Intertidal and near shore: The areas along the beach known as intertidal zones are constantly exposed and covered by the ocean's tides. This area is home to a wide variety of life. The upper intertidal zones to the region where land vegetation becomes dominant are all included in shore ecosystems. It may be submerged occasionally or on a daily basis. Many animals in this area are scavengers that feed on marine life that washes ashore. The beach and intertidal habitats are also heavily utilised by numerous terrestrial species. Through the process of bio erosion, a subset of species in this ecosystem bores and grinds exposed rock.

Estuaries: Estuaries are close to the coast and are affected by the tides. A partially contained coastal body of water known

as an estuary has a free connection to the open sea and one or more rivers or streams flowing into it. Between freshwater river ecosystems and saltwater maritime environments, estuaries serve as a transitional zone. They are influenced by riverine and marine factors, including flows of fresh water and silt, tides, waves, and the entrance of salt water. Estuaries are among the world's most productive natural environments because of the high quantities of nutrients present in the water column and sediment due to the varying flows of fresh and salt water.

Reefs: Some of the world's most dense and diverse environments can be found on reefs. Although reefs can also exist in cold water, tropical coral reefs are the most well-known kinds and can be found in most tropical waters. Corals and other organisms that deposit calcium build up reefs, which are typically found on top of a rocky outcrop on the ocean floor. Reefs can develop on different surfaces, making it feasible to build artificial reefs. The corals themselves, their symbiotic zooxanthellae, tropical fish, and many other creatures all live in abundance on coral reefs.

Open ocean: Reefs contain some of the planet's most crowded and varied habitats. Reefs can also be found in cold water; however tropical coral reefs are the most well-known and are present in the majority of tropical waters. Reefs are often situated on top of a rocky outcrop on the ocean floor and are created by corals and other creatures that deposit calcium. Reefs can grow on a variety of surfaces, making the construction of artificial reefs possible. Coral reefs are home to a wide variety of organisms, including the corals themselves, their symbiotic zooxanthellae, tropical fish, and many others.

Deep sea and trenches: The Mariana Trench in the Pacific Ocean, close to the Philippines, has a depth of 10,924 metres, making it the deepest oceanic trench ever measured. Even though there is no sunlight and high water pressure at these depths, some life can still be found there. Generally speaking, the aphotic zone—the region where sunlight loses its ability to penetrate water—is where the deep sea originates. These depths are home to a variety of life forms that are able to produce their own light, or

Correspondence to: Sandre Seria, Department of Biological Sciences, University of Cape Town, Cape Town, South Africa, E-mail: Sandse25@yahoo.com

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bioluminescence. Around seamounts that rise from the ocean's depths, where fish and other marine species congregate to reproduce and feed, marine life also thrives. As its opposites, cold seeps, hydrothermal vents operate as oases along the mid-ocean

ridge spreading centres. Such areas support distinctive biomes, and several novel bacteria and other lifeforms have been found there.