

Glossary

A Abyssal zone: pelagic zone that contains the very deep benthic communities near the bottom of oceans.

Aerobic: an organism requiring the presence of oxygen for life

Anaerobic: an organism living in the absence of oxygen

Anthropogenic: created by people or caused by human activity

Aphotic zone: dark region of the ocean that lies below the surface sunlit waters

Aquifer: A permeable region of rock or soil through which water can move.

Archaea: A phylogenetic domain of prokaryotes consisting of those that can produce methane, organisms that require salt and those who live in extreme conditions such as temperatures above 80° C or higher.

Assimilation: The conversion of nutrients into living tissue; constructive metabolism.

Autotrophs: Organisms capable of making their own food from inorganic materials

B Bacteria: All prokaryotes that are not members of the domain Archaea

Basement rock: The rock layers that lie underneath layers of sediments

Biogeography: The study of the distribution of species (biology) spatially (geography) and temporally (history)

Biomass: the total weight of living organisms

Biosphere: The biological component of earth systems, including all living organisms on earth together with the dead organic matter produced by them. From an ecological point of view, the biosphere is the "global ecosystem", comprising the totality of biodiversity on earth and performing all manner of biological functions, including photosynthesis, respiration, decomposition, nitrogen fixation and denitrification. (<http://www.eoearth.org/article/Biosphere?topic=58074>)

C Chemocline: caused by a strong, vertical chemical gradient within a body of water

Chemosynthetic bacteria: Bacteria are able to use chemical energy to produce organic compounds or food.

Chemosynthesis: A process by which inorganic materials are converted to food or organic material using chemical energy

Cold seeps: areas of the ocean floor where hydrogen sulfide, methane and other hydrocarbon-rich fluid seepage occurs, often in the form of a brine pool; constitute a biome supporting several endemic species.

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Continental shelf: the extended perimeter of each continent and associated coastal plain, and was part of the continent during the glacial periods, but is undersea during interglacial periods such as the current epoch; by relatively shallow seas (known as shelf seas) and gulfs

Coral reefs: underwater structures made from calcium carbonate secreted by corals. Corals are colonies of tiny living animals found in marine waters containing few nutrients. Most coral reefs are built from stony corals, and are formed by polyps that live together in groups. The polyps secrete a hard carbonate exoskeleton, which provides support and protection for the body of each polyp. Reefs grow best in warm, shallow, clear, sunny, and agitated waters.

Crust: The outermost layer of rock that covers the earth's surface; consists of continental and ocean crust

Cyanobacteria: a phylum of bacteria that obtain their energy through photosynthesis. They are found both in marine and freshwater systems and are an important component of the nitrogen cycle. They are NOT algae, as the misnomer "blue-green algae" would imply.

E Epipelagic zone: ocean depths between the surface and approximately 200 meters

Eukaryote: A cell or organism having a unit membrane-enclosed (true) nucleus and usually other organelles.

Euphotic zone: The well-lit surface layer of the ocean where plants photosynthesize; also called the photic zone

H Halocline: caused by a strong, vertical salinity gradient within a body of water

Hydrothermal vents: cracks along a rift or ridge in the deep ocean floor that spews out water heated to high temperatures by the magma under the Earth's crust. Some vents are in areas of seafloor spreading.

I Intertidal zone: the part of the littoral zone above low-tide mark

L Lithosphere: The rigid outer shell of the earth

Littoral zone: of or pertaining to the biogeographic zone between the high- and low-water marks

M Mesopelagic layer: life at ocean depths between 180-900 meters below the surface

Metabolism: All biochemical reactions in a cell, both anabolic (processes involved in the synthesis of cell constituents from simpler molecules, usually requiring energy) and catabolic (processes involved in the breakdown of organic or inorganic compounds, usually leading to energy production)

Microbe: any microscopic organism

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Midwater: ocean depths between 500 and 2,000 meters below the sea surface

N Neritic zone: also called coastal waters, the coastal ocean or the sublittoral zone, is the part of the ocean extending from the low tide mark to the edge of the continental shelf, with a relatively shallow depth extending to about 200m. Generally has well-oxygenated water, low water pressure, and relatively stable temperature and salinity levels. Accounts for the location of the majority of sea life

O Ocean banks: sometimes referred to as a fishing bank, an area on the continental shelf, which is shallow compared to its surrounding area, such as a shoal or the top of an underwater hill. Somewhat like continental slopes, ocean banks slopes can upwell as tidal and other flows intercept them, resulting in nutrient-rich currents. Some large banks, such as Dogger Bank and the Grand Banks of Newfoundland, are among the richest fishing grounds in the world.

Oxidation-Reduction (Redox) reactions: A pair of reactions in which one compound becomes oxidized (loses electrons; gains positive charge) while another becomes reduced (gains electrons; gains negative charge)

P Pelagic zone: referring to the water column away from the bottom, sometimes also referred to as open ocean

Photic zone: depth of the water in a lake or ocean that is exposed to sufficient sunlight for photosynthesis to occur.

Plate tectonics: A theory that the earth's surface is broken up into a few large, thick plates that are slowly moving and changing size.

Prokaryote: A cell or organism lacking a nucleus and other membrane-enclosed organelles, usually having its DNA in a single circular molecule

Pycnocline: caused by a strong, vertical density gradient within a body of water

S Seamounts: large, submarine volcanic mountains rising at least 3,000 feet above the surrounding seafloor; abundant and occur in all major ocean basins.

Stratification: formation or deposition of layers, as of rocks or sediments

Subsurface biosphere: The biosphere below the sea floor

T Thermocline: a thin but distinct layer in a large body of water in which temperature changes more rapidly with depth than it does in the layers above or below.

Thermohaline: refers to the part of the large-scale ocean circulation that is driven by global density gradients created by surface heat and freshwater fluxes.

Turbidity: opaqueness, commonly caused by the stirring of sediment