

continental shelves: The gently sloping underwater edge of a continent, varying in width from 100m to 1300 km with an average slope of 1.9 m/km.

pycnocline: A zone of the ocean beneath the surface in which density increases rapidly with depth.

heat capacity: a measure of the heat energy required to increase the temperature of a given substance by a given amount.

current: The flow of a liquid or gas in a certain direction.

upwelling: In the ocean, the flow of cold, deep water toward the surface. They occur in areas where surface currents diverge.

downwelling: In the ocean, the flow of warm surface water toward the ocean floor. They occur where surface currents converge.

thermohaline circulation: A worldwide system of ocean currents in which warmer, fresher water moves along the surface and colder, saltier water (which is denser) moves deep beneath the surface.

North Atlantic Deep Water (NADW): The deep portion of the thermohaline circulation in the northern Atlantic Ocean.

El Nino-Southern Oscillation (ENSO): A systematic shift in atmospheric pressure, sea surface temperature, and ocean circulation in the tropical Pacific Ocean. Its cycle give rise to El Nino and La Nina conditions.

El-Nino: An exceptionally strong warming of the eastern Pacific Ocean that occurs every 2-8 years and depresses local fish and bird populations by altering the marine food web in the area. Originally, the name that Spanish-speaking fishermen gave to an unusually warm surface current that sometimes arrived near the Pacific coast of South America around Christmastime.

La Nina: An exceptionally strong cooling of surface water in the equatorial Pacific Ocean that occurs every 2-8 years and has widespread climatic consequences.

photic zone: In the ocean or a freshwater body, the well-lit top layer of water where photosynthesis occurs.

pelagic: Of, relating to, or living between the surface and floor of the ocean.

benthic: Of, relating to, or living on the bottom of a water body.

intertidal: Of, relating to, or living along shorelines between the highest reach of the highest tide and the lowest reach of the lowest tide.

tides: The periodic rise and fall of the ocean's height at a given location, caused by the gravitational pull of the moon and sun.

salt marshes: Flat land that is intermittently flooded by the ocean where the tide reaches inland. They occur along temperate coastlines and are thickly vegetated with grasses, rushes, shrubs, and other herbaceous plants.

mangroves: A tree with a unique type of roots that curve upward to obtain oxygen, which is lacking in the mud in which they grow, or that curve downward to serve as stilts to support the tree in changing water levels. They grow on the coastlines of the tropics and subtropics.

estuaries: An area where a river flows into the ocean, mixing fresh water with saltwater.

coral reef: a mass of calcium carbonate composed of the skeletons of tiny colonial marine organisms called corals.

corals: Tiny marine animals that build coral reefs. They attach to rock or existing reef and capture passing food with stinging tentacles. They also derive nourishment from photosynthetic symbiotic algae known as zooxanthellae.

zooxanthellae: Symbiotic algae that inhabit the bodies of corals and produce food through photosynthesis.

gyre: An area of the ocean where currents converge and floating debris accumulates.

Great Pacific Garbage Patch: A portion of the North Pacific gyre where currents concentrate plastics and other floating debris that pose danger to marine organisms.

harmful algal blooms: A population explosion of toxic algae caused by excessive nutrient concentrations.

red tide: A harmful algal bloom consisting of algae that produce reddish pigments that discolor surface waters.

ocean acidification: The process by which today's oceans are becoming more acidic (attaining lower pH as a result of increased carbon dioxide concentrations in the atmosphere. It occurs as ocean water absorbs carbon dioxide from the air and forms carbonic acid. This impairs the ability of corals and other organisms to build exoskeletons of calcium carbonate, imperiling coral reefs and the many organisms that depend on them.

marine protected area (MPA): an area of the ocean set aside to protect marine life from fishing pressures. It may be protected from some human activities, but be open to others.

marine reserves: An area of the ocean designated as a "no-fishing" zone, allowing no extractive activities.