The Ocean

IS A WATER WORLD

An ocean is a major body of saline water, and a principal component of the hydrosphere. Approximately 71% of the Earth's surface is covered by ocean, a continuous body of water that is customarily divided into several principal oceans and smaller seas.

More than half of this area is over 3,000 meters deep. Average oceanic salinity is around 35 parts per thousand, and nearly all seawater has salinity in the range of 30 to 38 ppt. Scientists estimate that 230,000 marine life forms of all types are currently known, but the total could be up to 10 times that number.

Overview

Though generally described as several 'separate' oceans, these waters comprise one global, interconnected body of salt water sometimes referred to as the World Ocean or global ocean. This concept of a continuous body of water with relatively free interchange among its parts is of fundamental importance to oceanography.

The major oceanic divisions are defined in part by the [continents](http://en.wikipedia.org/wiki/Continent), various [archipelagos](http://en.wikipedia.org/wiki/Archipelago), and other criteria. These divisions are (in descending order of size):

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| [**Pacific Ocean**](http://en.wikipedia.org/wiki/Pacific_Ocean)**, which separates** [**Asia**](http://en.wikipedia.org/wiki/Asia) **and** [**Australia**](http://en.wikipedia.org/wiki/Australia) **from the** [**Americas**](http://en.wikipedia.org/wiki/Americas) |
| [**Atlantic Ocean**](http://en.wikipedia.org/wiki/Atlantic_Ocean)**, which separates the Americas from** [**Eurasia**](http://en.wikipedia.org/wiki/Eurasia) **and** [**Africa**](http://en.wikipedia.org/wiki/Africa) |
| [**Indian Ocean**](http://en.wikipedia.org/wiki/Indian_Ocean)**, which washes upon southern** [**Asia**](http://en.wikipedia.org/wiki/Asia) **and separates Africa and Australia** |
| [**Arctic Ocean**](http://en.wikipedia.org/wiki/Arctic_Ocean)**, sometimes considered a** [**sea**](http://en.wikipedia.org/wiki/Sea) **of the Atlantic, which covers much of the** [**Arctic**](http://en.wikipedia.org/wiki/Arctic) **and washes upon northern** [**North America**](http://en.wikipedia.org/wiki/North_America) **and Eurasia.** |

The Pacific and Atlantic may be further subdivided by the [equator](http://en.wikipedia.org/wiki/Equator) into [northern](http://en.wikipedia.org/wiki/North) and [southern](http://en.wikipedia.org/wiki/South) portions. Smaller regions of the oceans are called [seas](http://en.wikipedia.org/wiki/Sea), [gulfs](http://en.wikipedia.org/wiki/Headlands_and_bays), [bays](http://en.wikipedia.org/wiki/Bay), [straits](http://en.wikipedia.org/wiki/Strait) and other names.

Geologically, an ocean is an area of [oceanic crust](http://en.wikipedia.org/wiki/Oceanic_crust) covered by water. Oceanic crust is the thin layer of solidified volcanic [basalt](http://en.wikipedia.org/wiki/Basalt) that covers the Earth's [mantle](http://en.wikipedia.org/wiki/Mantle_%28geology%29). [Continental crust](http://en.wikipedia.org/wiki/Continental_crust) is thicker but less dense. From this perspective, the earth has three oceans: the World Ocean, the [Caspian Sea](http://en.wikipedia.org/wiki/Caspian_Sea), and [Black Sea](http://en.wikipedia.org/wiki/Black_Sea). The latter two were formed by the collision of [Cimmeria](http://en.wikipedia.org/wiki/Cimmerian_plate) with [Laurasia](http://en.wikipedia.org/wiki/Laurasia). The [Mediterranean Sea](http://en.wikipedia.org/wiki/Mediterranean_Sea) is at times a discrete ocean, because [tectonic plate movement](http://en.wikipedia.org/wiki/Plate_tectonics) has repeatedly broken its connection to the World Ocean through the [Strait of Gibraltar](http://en.wikipedia.org/wiki/Strait_of_Gibraltar). The Black Sea is connected to the Mediterranean through the [Bosporus](http://en.wikipedia.org/wiki/Bosporus), but the Bosporus is a natural [canal](http://en.wikipedia.org/wiki/Canal) cut through continental rock some 7,000 years ago, rather than a piece of oceanic sea floor like the Strait of Gibraltar.

Despite their names, smaller landlocked bodies of saltwater that are *not* connected with the World Ocean, such as the [Aral Sea](http://en.wikipedia.org/wiki/Aral_Sea), are actually [salt lakes](http://en.wikipedia.org/wiki/Salt_lake).

Ocean and life

The ocean has a significant effect on the [biosphere](http://en.wikipedia.org/wiki/Biosphere). Oceanic [evaporation](http://en.wikipedia.org/wiki/Evaporation), as a phase of the [water cycle](http://en.wikipedia.org/wiki/Water_cycle), is the source of most [rainfall](http://en.wikipedia.org/wiki/Rain), and ocean temperatures determine [climate](http://en.wikipedia.org/wiki/Climate) and [wind](http://en.wikipedia.org/wiki/Wind) patterns that affect life on land. [Life](http://en.wikipedia.org/wiki/Life) within the ocean [evolved](http://en.wikipedia.org/wiki/Evolution) 3 billion years prior to life on land. Both the depth and distance from shore strongly influence the amount and kinds of [plants](http://en.wikipedia.org/wiki/Plant) and [animals](http://en.wikipedia.org/wiki/Animal) that live there.

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Ocean currents greatly affect the Earth's climate by transferring heat from the tropics to the Polar Regions, and transferring warm or cold air and precipitation to coastal regions, where winds may carry them inland. Surface heat and freshwater fluxes create global density gradients that drive the thermohaline circulation part of large-scale ocean circulation. It plays an important role in supplying heat to the polar regions, and thus in sea ice regulation. Changes in the thermohaline circulation are thought to have significant impacts on the Earth's radiation budget. Insofar as the thermohaline circulation governs the rate at which deep waters reach the surface, it may also significantly influence atmospheric carbon dioxide concentrations.

For a discussion of the possibilities of changes to the thermohaline circulation under global warming, see shutdown of thermohaline circulation.

It is often stated that the thermohaline circulation is the primary reason that the climate of Western Europe is so temperate. An alternate hypothesis claims that this is largely incorrect, and that Europe is warm mostly because it lies downwind of an ocean basin, and because atmospheric waves bring warm air north from the subtropics.

The Antarctic Circumpolar Current encircles that continent, influencing the area's climate and connecting currents in several oceans.

One of the most dramatic forms of weather occurs over the oceans: tropical cyclones, (also called "typhoons" and "hurricanes")