

Editorial Note on Ocean Currents

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Abstract

A current could be a continuous, directed movement of ocean water generated by many forces acting upon the water, as well as wind, the upshot, breaking waves, cabling, and temperature and salinity variations. Depth contours, boundary configurations, and interactions with alternative currents influence a current's direction and strength. Ocean currents area unit primarily horizontal water movements. A current flow for nice distances and along they produce the world belt that plays a dominant role in deciding the climate of the many of Earth's regions. A lot of specifically, ocean currents influence the temperature of the regions through that they travel. For instance, heat currents traveling on a lot of temperate coasts increase the temperature of the realm by warming the ocean breezes that go by them. Maybe the foremost hanging example is that the Gulf Stream, that makes northwest Europe rather more temperate than the other region at an equivalent latitude. Another example is capital of Peru, Peru, wherever the climate is cooler, being sub-tropical, than the tropical latitudes during which the realm is found, because of the Peruvian current.

Keywords: Breaking waves; cabling; Temperature; Salinity variations; Gulf stream

Function

Surface oceanic currents area unit typically wind driven and develop their typical clockwise spirals within the hemisphere and counterclockwise rotation within the hemisphere thanks to obligatory wind stresses. In these wind-driven currents, the Vagn Walfrid Ekman spiral impact leads to the currents flowing at AN angle to the driving winds. Additionally, the areas of surface ocean currents move somewhat with the seasons; this is often most notable in equatorial currents. Deep ocean basins usually have a non-symmetric surface current, in this the Japanese equatorward-flowing branch is broad and diffuse whereas the western poleward flowing branch is extremely slim. These western boundary currents (of that the Gulf stream is AN example) area unit a consequence of the rotation of the planet. Deep ocean currents area unit driven by density and temperature gradients. Thermohaline circulation is additionally referred to as the ocean's belt (which refers to deep ocean density-driven ocean basin currents).

These currents, known as submarine rivers, flow underneath the surface of the ocean and area unit hidden from immediate detection. Wherever vital vertical movement of ocean currents is ascertained, this is often referred to as upwelling and down welling. Deep ocean currents area unit presently being researched employing a fleet of underwater robots known as constellation. Surface currents compose solely V-day of all water within the ocean, area unit usually restricted to the higher four hundred m (1,300 ft) of ocean water, and area unit separated from lower regions by variable temperatures and salinity that have an effect on the density of the water that successively, defines every oceanic region. because of the movement of trouble in ocean basins is caused by density-driven forces and gravity, deep waters sink into deep ocean basins at high latitudes wherever the temperatures area unit cold enough to cause the density to extend. Ocean currents area unit measured in adventurer (sv), wherever one sv is akin to a volume flow of 1000,000 m³ (35,000,000 copper ft) per second. Surface currents area unit found on the surface of AN ocean, and area unit driven by massive scale wind currents. They are directly littered with the wind—the upshot plays a job in their behaviors.

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