

Ocean currents are the continuous, predictable, directional movement of seawater driven by gravity, wind (Coriolis Effect), and water density. Ocean water moves in two directions: horizontally and vertically. Horizontal movements are referred to as currents, while vertical changes are called upwellings or downwellings.

The general movement of the large mass of surface water in a definite pattern is called ocean currents.

CAUSES OF THE MOVEMENT OF OCEAN CURRENTS

1. The earth's rotation which results in the genesis of deflective or Coriolis force.
2. The planetary winds.
3. The difference in the temperature of ocean waters between the equator and the poles.
4. Similarly of the ocean affects the density of water, which is the main cause of the movement of ocean water.
5. The shape and configuration of the continent determine the direction of ocean current.

OCEAN CURRENTS

Types of ocean currents on the basis of temperature can be divided into following—

1. Warm Currents: Those ocean currents which flow from the warmer equatorial zone to the cooler polar regions having a higher surface temperature are called warm currents.
2. Cold Currents: Those ocean currents which flow from the polar region to the equatorial region, having a low surface temperature are called cold currents.

Major Ocean Currents of the Atlantic Ocean

Warm currents of the Atlantic Ocean	Cold Current of the Atlantic Ocean
1. North Equatorial Current which bifurcates into Antilles Current and Caribbean Current.	1. Labrador Current - Originates in the Baffin Bay drifts south eastwards Baffin and Greenland and merges with Gulf stream off New Foundland.
2. South Equatorial Current bifurcates at the Current protruding landmass of northeast Brazil into northern Cayenne Current and the southern Brazilian Current (South Atlantic Ocean).	2. The Irminger Current of Greenland Current Flows between Greenland and Iceland and merges with North Atlantic Drift.
3. Gulf stream - One of the strongest ocean system which originates in the Gulf of Mexico. It consists of (i) Florida Current - From the Strait of Florida to Cape Hatteras (USA) (ii) Gulf Stream (cold wall) - From Cape Hatters	3. Canaries Current - Continuation of North Atlantic Drift along the western coast of the Iberian Peninsula and North Africa in the southern direction.



<p>to the Grand Bank (Northeast USA)</p> <p>(iii) North Atlantic Drift - From the Grand Bank, near New Foundland to western Europe.</p>	
<p>4. Counter Equatorial Current - Flows from west to east in between the North and South Equatorial Current.</p>	<p>4. Falkland Current - Flows northwards along the eastern coast of South America up to Argentina.</p>
	<p>5. South Atlantic Drift - Under the influence of westerlies at about 40°S latitude, Brazilian Current continues as the South Atlantic Current.</p>
	<p>6. Benguela Current - Flows northwards along the western coast of South Africa.</p>

Major Ocean Currents of the Pacific Ocean

WARM CURRENTS OF THE PACIFIC OCEAN	COLD CURRENTS OF THE PACIFIC OCEAN
<p>1. North Equatorial Current - Flows westwards from the western coast of Mexico to the Philippines.</p>	<p>1. Oyashio (Kurile) Current - Bering Current or Alaskan Current and Okhotsk Current meet to form Oyashio Current.</p>
<p>2. South Equatorial Current - Flows westwards in the southern Pacific Ocean and bifurcates into northern and southern branches near new Guinea.</p>	<p>2. California Current - Flows along with the western cost of USA and finally merges with North Equatorial Current (Warm) to complete the circulation.</p>
<p>3. Counter Equatorial Current - Flows between north and south Equatorial Current in the opposite direction.</p>	<p>3. West Wind Drift - Flows from west to east in the zone of 40°-50°S latitude under the influence of Westerlies.</p>
<p>4. Kuroshio or Japan Current - Flows from Taiwan to Bering Strait.</p>	<p>4. Peruvian (Humboldt) Current - Flows northwards along the western coast of South America is actually the continuation of West Wind Drift.</p>

Major Ocean Currents of the Indian Ocean

WARM CURRENTS OF THE INDIAN OCEAN

1. Indian Equatorial Current: Flows westwards in the south Indian Ocean, bifurcates at Madagascar and flows are Mozambique and Agulhas Current in the southern direction.
2. South West Monsoon Current: Flows along the coasts of India in an easterly direction.
3. North West Monsoon Current: Flows along the eastern coasts of India during winter.

Major Ocean Routes of the World

