

Gulf Stream Encyclopedia Article

Gulf Stream

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Gulf Stream

The Gulf Stream is a well-known, fast, intense, and warm ocean current in the North Atlantic Ocean. Its path goes from the **Gulf of Mexico** and the Caribbean Sea, along the eastern coast of the United States, heading to the northeast Atlantic Ocean, to the British Isles, and the Norway coasts. This western boundary current is responsible for the mild **climate** of western **Europe**, which is located at a much higher **latitude** than most of New England, but experiences much milder **weather**.

The origin of the Gulf Stream goes back to the broad, slow, and warm North Equatorial Current under the trade winds, which moves to the west, and when it reaches the Caribbean Sea, its **water** moves through the Yucatan Channel. Here, it becomes not only narrower, but also gains strength, meandering around the Gulf of Mexico (here it is often referred to as the Loop Current), then exiting the Gulf at the Straits of Florida (here, it is called the Florida Current). Along the east coast of Florida, the current meets the Antilles Current, and the flow, now called the Gulf Stream, runs parallel to the coast until reaching Cape Hatteras, North Carolina, where it moves away from the coast. Around 50 degrees West, it splits into different currents, the largest of which is the North Atlantic Current, which also feeds the northbound Norwegian Current. The Canary Current flows towards the equator on the eastern side of the Atlantic Ocean.

The Gulf Stream also has mesoscale eddies or rings, large, concentric cylinders, reaching deep down in the water, which are usually about 62–186 mi (100–300 km) in diameter. They appear on both sides of the Gulf Stream, forming as a meandering loop cut off from the current, and can contain both a warm or a cold core. These rings help to maintain the thermohaline (**temperature** and salinity) balance in the ocean basin.

The Gulf Stream not only helps to redistribute heat by carrying warm waters towards the North Pole, but also has a large impact on the climate on land by bringing humid, mild air to the British Isles and Northwest Europe, causing significantly milder winters than at the same latitudes in the West.

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