

The Gulf Stream

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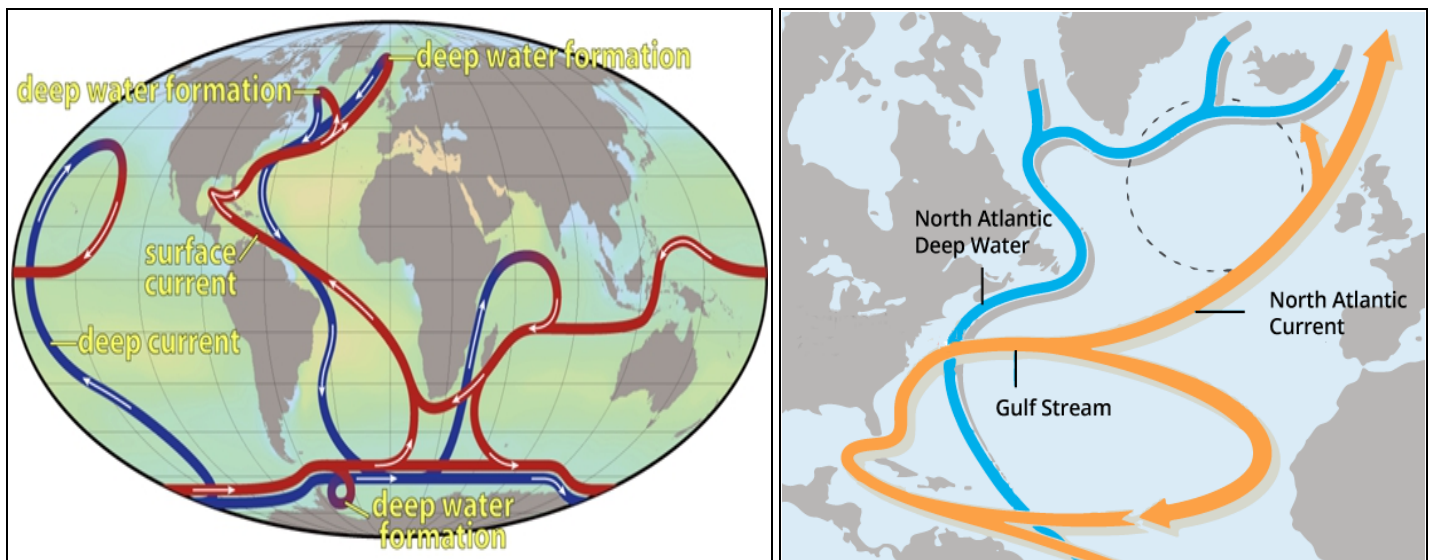
8/19/2020

The Gulf Stream is a strong ocean current that brings warm water from the Gulf of Mexico into the Atlantic Ocean. It extends up the eastern coast of the United States and Canada before flowing between Ireland and Iceland.

The Gulf Stream was first described by the Spanish navigator Juan Ponce de León in 1513 during his exploration of the Florida coast. In the late 1700s Benjamin Franklin produced a map of the current while systematic surveying of the stream was begun in 1844 by the United States Coast and Geodetic Survey. Modern efforts were inaugurated in the early 1930s by the ketch “*Atlantis*” of the Woods Hole Oceanographic Institution in Massachusetts.

Off the coast of the United States, the Gulf Stream system separates the relatively warm and saline waters of the Sargasso Sea in the mid-Atlantic region from the colder waters to the west and north. In winter, for example, average surface temperatures of the Gulf Stream off New England may be 20° F (11° C) higher than those of surface waters only 150 miles (240 km) to the northwest, although there is less than a 10° F (6° C) change in surface-water temperatures over a 1,000-mile (1,600-kilometre) distance to the southeast. Compare London, England and St. Anthony, Newfoundland, which are at similar latitudes but on opposite sides of the North Atlantic. The average yearly temperature in London is about 52°F, compared to the average yearly temperature of St. Anthony of 32.6°F. The nearly 20°F difference is almost entirely the result of the Gulf Stream bringing warm waters to Western Europe. The relative warmth and humidity caused by the Gulf Stream is one reason Ireland is known for its green vegetation.

Beyond Cape Hatteras the Gulf Stream broadens and moves into deeper water. There it crosses the Western Boundary Undercurrent, which consists of cold, southward-flowing water that sinks to considerable depths in the vicinity of Greenland. About 1,500 miles (2,400 km) northeast of Cape Hatteras, in the area of the Grand Banks, the warm Gulf Stream waters come close to the cold, southward-flowing Labrador Current. The contact of cold, humid air moving over the Labrador Current with the warm surface waters of the Gulf Stream causes widespread condensation. This climatic condition causes the region to have one of the highest incidences of fog in the world.



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