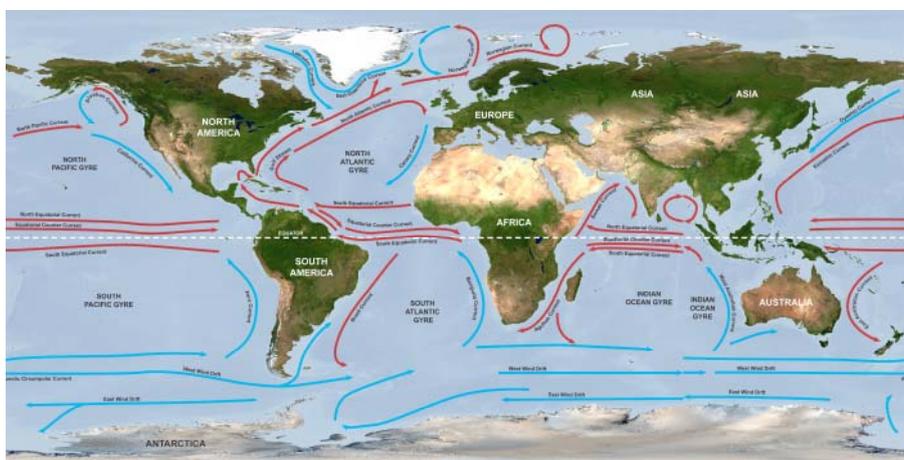


## The Gulf Stream

If you look at a world map, you will see that Ireland is on the same latitude (see left) as Newfoundland, southern Alaska and parts of Russia, all places that have extremely cold climates. So why does Ireland have a much warmer climate? The reason for this is the Gulf Stream, a warm current of water that flows all the way from the Gulf of Mexico onto Ireland's coast. This warm water raises both sea and air temperatures around Ireland, making our overall climate of 10°C warmer in the winter than it otherwise would be.



### Where in the world are we?

The map of the world is divided into imaginary lines known as latitude and longitude. It is like a giant ruler, which helps us pin point any location on the globe. Latitudinal lines are horizontal and longitudinal lines are vertical.

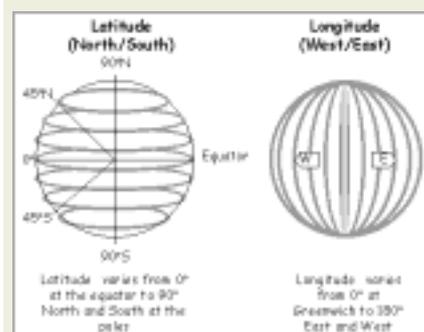


Image courtesy of www.NOAA.gov

Each point where these lines of longitude and latitude meet has a unique number or co-ordinates.

For example, to locate Sherkin Island on a map just by using latitude and longitude coordinates, you would look at latitude 51° 28'38"N and longitude 09° 25'36"W. These coordinates are based on the angles in a circle, which are measures in degrees (°) and further into minutes (') and seconds (").

Latitude varies from 0° at the Equator to 90° North and South at the poles.

Longitude varies from 0° at Greenwich (in the UK) to 180° East and West.

Places that are on a latitude nearer to 0° are generally warmer, as they are nearer the Equator. Those that are on a latitude nearer to 90° are generally cooler as they are nearer the poles.

The warming effect of the Gulf Stream on Ireland, means that our climate is much warmer than other countries on a similar latitude.

The world's ocean is one big conveyor belt of ocean currents, moving around the world. The Gulf Stream, which is part of this conveyor belt, flows from the Gulf of Mexico in a clockwise and north-eastward direction in the North Atlantic. It isn't just one ribbon of water but a network of currents that move about over time.

The Gulf Stream carries more water than that of all the world's rivers combined (4 billion cubic feet per second). It flows 300 times faster than the Amazon River.



### Studying the Gulf Stream

As well as studying the Gulf Stream from the sea, scientists can now map it from space, using sensors on satellites to detect the temperature of the water. This helps them keep track of its changing patterns. Scientists are concerned that the melting ice caps will send cold water into the Gulf Stream, disrupting its flow. Some believe that the Gulf Stream is slowing down, which would affect the movement of water around the ocean and the life that depend on the currents.

### Discovering the Gulf Stream

The Gulf Stream was first discovered by a Spanish explorer, Juan Ponce de León, in the 16th century. He is credited with being the first explorer to reach Florida. According to the ship's log, the ship could not proceed forward, despite a great wind behind them. In the end it was discovered that the current was more powerful than the wind.

The Gulf Stream was used by explorers to colonise the Americas. It made the journey faster and helped direct the ships.

